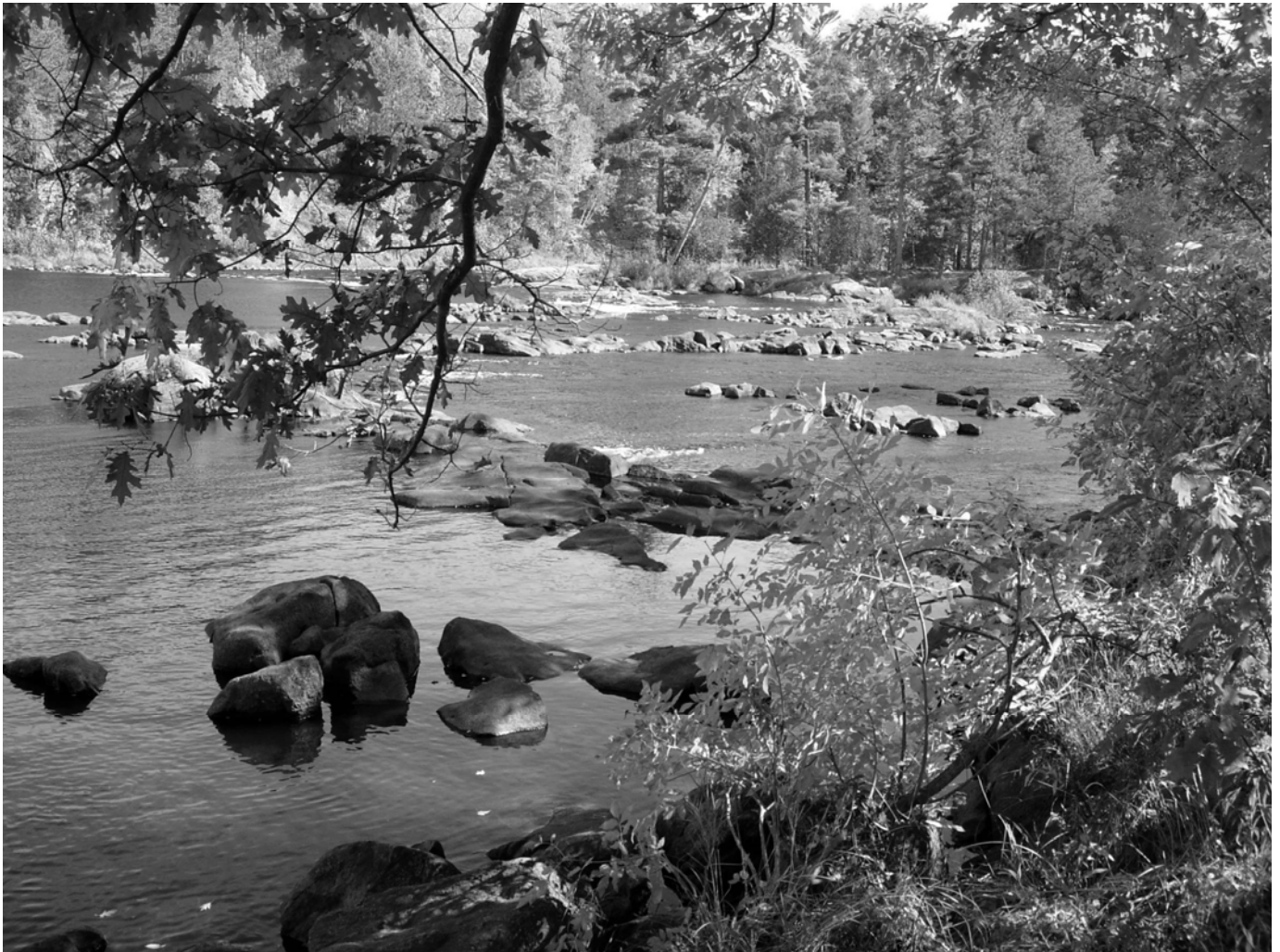


# **FLAMBEAU RIVER STATE FOREST MASTER PLAN PREFERRED ALTERNATIVE AND OPTIONS**



Wisconsin Department of Natural Resources  
Division of Forestry

**June 2009**



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# **FLAMBEAU RIVER STATE FOREST**

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**PREFERRED ALTERNATIVES AND OPTIONS | JUNE 2009**

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## **FLAMBEAU RIVER STATE FOREST ACKNOWLEDGEMENTS**

Many individuals from the Department of Natural Resources have developed these alternatives through an integrated planning process. Through their hard work and expertise, these people have developed preferred alternatives and options for public consideration.

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## INTRODUCTION AND EXECUTIVE SUMMARY

### PURPOSE OF THIS DOCUMENT

The *Preferred Alternatives and Options* presented here are the culmination of several months of planning to update the property's master plan, which was approved in 1980. The department is revising the plan in light of changing ecological, economic, and social conditions, and to reflect current resource and recreation management principles in the context of the larger landscape in which the forest is located, as required by Wisconsin State Statute 28.04. When completed, the new master plan will receive a formal, rigorous review approximately every 15 years and will be updated by plan amendments and variances as necessary through a formal process that includes public involvement.

The Flambeau River State Forest Master Plan Preferred Alternatives and Options:

- Provides a vision and framework for the use, development, management and acquisition of the forest well into the future with an emphasis on the next 15 years.
- Identifies land management areas and plans for their future management.
- Describes general management objectives and specific management prescriptions for each area.
- Makes recommendations for forest production, recreation, and habitat conservation to meet current and future needs.
- Evaluates a range of alternatives and their impacts
- Provides for continuing public involvement throughout the planning process.

### DESCRIPTION OF THE PROPERTY

Located in north central Wisconsin in the town of Winter, the Flambeau River State Forest is located in Sawyer, Price, Rusk, Ashland, and Iron Counties and surrounds portions of the North and South Forks of the Flambeau River. With just over 90,000 acres, the forest is one of the largest pieces of public land in the region. Access to the forest is by U.S. Highway 8 or State Highways 70 and 13. County highways M and W are the major roads into the forest, with low road densities locally and on the forest.

The forest is within the North Central Forest Ecological Landscape, an area characterized by extensive forests, wetlands, a high percentage of public lands, and minimal agriculture. Ownerships near the forest include four state wildlife areas, two units of the Chequamegon-Nicolet National Forest, and large acreages of three county forests. There are also large tracts of industrial forest lands near the forest. The FRSF supports a diversity of cover and community types, especially northern hardwoods and remnant stands of old-growth hemlock. The forest is perhaps best characterized by the 75 miles of the North and South Forks of the Flambeau River that meander through the property.

The FRSF is a popular destination for canoeists and kayakers who come to enjoy the rapids and the remote forested nature of the Flambeau River. Hunting and fishing are popular recreational activities here, with a long tradition of hunting camps for large and small game. The FRSF and surrounding area are part of a vast regional ATV trail network that has made the forest and surrounding region a destination for ATV riders.

### OVERVIEW OF THE ALTERNATIVES PROCESS AND PLAN DEVELOPMENT

The *Preferred Alternatives and Options* is the second phase of the master planning process and is the initial proposal for forest-wide management. This phase incorporates the inventory and assessment data from Phase I, planning issues and considerations, and public comment as management alternatives are developed and evaluated. In addition to resource and recreation management, this document also explores land acquisition opportunities and benefits. Throughout this process, issues identified early in the planning process, public comments, and the opportunities and limitations of the property have been reviewed and integrated into the preferred alternatives and options. Data, public comments, and the expertise provided by an interdisciplinary team of land managers, resource specialists, and state forest planners, is an integral component in

evaluating a full range of forest management alternatives. The planning process is guided by State Statute 28.04 and Wisconsin Administrative code NR 44.



### Public Participation

To create a shared vision for the future of the Flambeau River State Forest, the planning process relies on a solid foundation of public participation. In September of 2008, a *Public Participation Plan* was adopted, outlining the process, procedures, and tools used throughout the planning process to encourage public awareness, interaction, and input. The Department of Natural Resources also works actively with local towns, tribes, non-governmental organizations, citizens, and businesses to develop the master plan. Public meetings were held in September of 2008, and public comment forms seeking input on a range of resource and recreation management considerations were mailed and available on-line. Additional opportunities for public participation will be provided during the development of the master plan and plan implementation.

## EVALUATION OF ALTERNATIVES

A brief description of the alternatives considered can be found at the end of each management area. Alternatives were evaluated by an integrated team of resource specialists and state forest planners to determine whether or not they met the management, social, economic, and ecological objectives of the property; sustainability criteria, and are financially, and legally feasible.

## ORGANIZATION AND CONTENT OF THIS DOCUMENT

This document is presented in six sections:

- Section One: Introduction
- Section Two: Highlights of the Preferred Alternative and Options Considered
- Section Two: Vision and Goals
- Section Three: Land Management
- Section Four: Recreation
- Section Five: Road Management
- Section Six: Real Estate and Land Acquisition

The *Preferred Alternatives and Options Considered* presents the proposed vision for land and recreation management on the forest. A brief discussion of the alternatives considered follows the preferred alternative. In some cases, there were no other alternatives considered. These exceptions indicate no practicable or feasible range of alternatives, and the preferred alternative represents management objectives and actions that can be met. Plan elements not covered in this document, such as administration and operations and the general forest management provisions, will be presented in the draft plan.



## HIGHLIGHTS OF THE PREFERRED ALTERNATIVE AND OPTIONS

### LAND MANAGEMENT

#### **River Corridor**

Approximately 17,000 acres along both sides of the Flambeau River will be designated as a scenic management area. The area retains most of the original quarter mile limited management buffer (with the exception of three native community management areas).

#### **Cover Type and Forest Production**

Over 61,000 acres are managed for forest production, representing 67% of the current FRSF acreage. Overall, there will be no significant changes in forest cover types, but over time, the forest will become more structurally diverse with snags, den trees, coarse woody debris, and large diameter canopy trees. Approximately 35,000 acres (40%) of the forest is classified as northern hardwoods, which will continue to be the dominant cover type. Forest production levels will also remain at current levels; approximately 2,000 acres/year (about 2% of the forest land base) with slight annual variations. Forest production management techniques include even-aged management (34%), uneven aged management (56%), and thinnings (10%).

#### **Native Community Management**

Approximately 8,000 acres (8%) will be in native community management. These areas include many wetlands and important community types on the forest. Management of old growth forests and forests with old growth characteristics will be an integral part in some of these areas, with an emphasis on hemlock-hardwoods, red and white pine, and yellow birch. Of this, 3% will be actively managed and 5% will be passively managed.

#### **Wildlife Habitat**

Rare, Threatened, and Endangered Species will continue to be protected by improving and maintaining habitat. Forest management practices will continue to utilize and incorporate considerations for threatened and endangered species. Large and small game populations will also be maintained through forest and habitat management, providing an array of forest types and age classes. A 4,000 acre habitat management area is proposed with an emphasis on early successional species, such as aspen, for ruffed grouse habitat.

#### **Wetlands and Aquatic Resources**

Wetlands, forested and non-forested, account for approximately 20% of the forest, will continue to be protected. They provide habitat for a diverse range of plants and wildlife, and are known to harbor many rare species. Wetlands are also critical in maintaining water quality for lakes, rivers, and streams. The diverse array of aquatic resources on the forest includes 75 miles of the North and South Forks of the Flambeau River, many streams, ephemeral ponds, and undeveloped lakes, most within an extensive forest matrix. These important resources will be maintained and protected.

#### **Research**

Research on the forest will continue to provide benefits for forest management and ecological values. There are two long-term research projects underway studying the effects of forest management on old-growth forests (UW-Madison) and old-growth forest characteristics (WDNR) of northern hardwood forests. These areas are represented as overlay zones; the UW Madison project is an 800 acre project located in Area 14: Flambeau Forks Native Community Management Area and the WDNR project is 500 acres and is located in Area 1: Exeland Plains Hardwoods and Area 5: Jump River Hardwoods. Research areas account for less than 2% of the current FRSF acreage.

## RECREATION

### Camping

A percentage of campsites at Connors Lake Campground will be upgraded with modern amenities. Lake of the Pines Campground will remain "rustic." Both locations will receive general site improvements and code upgrades to accommodate a wider range of camping interests. A portion of campsites will be added to the statewide reservation system. A small campground (5-10 campsites) will be developed near the Forest Headquarters to provide a convenient day-trip opportunity and to disperse river users. A new shower building will be provided in a central location on the property to accommodate campers and other recreationists.

### River Recreation

The Flambeau River corridor will be designated as a scenic management area and continue to provide a remote, "wilderness-like" experience. River campsites and landings will be renovated or redeveloped as needed. Additional camping opportunities will include individual primitive river campsites, small group campsites, and a small rustic campground near the forest headquarters.

### Day Use Areas

Day use areas on the forest will be increased. Slough Gundy, a scenic and frequently visited location on the forest, will be developed and improved for day use. Connors Lake Picnic area, a popular day-use location will receive some new amenities. One over-used river camp, Hervas Landing, will be restored and re-designated as a day-use /picnic area.

### Landings

Most landings will remain unchanged, however, some will be improved to meet users' needs, e.g. handicap accessibility, ramp, fishing pier, boat washing station, or signage. Some landings will be redeveloped to protect shoreline or to improve the approach to water. An additional landing will be developed on the Upper Flambeau to improve public access. Several landings will be improved to provide ADA accessibility. Information facilities will be installed to provide maps and details about water related conservation issues or recreational use.

### Motorized Recreation

The Flambeau snowmobile/ATV trail will be extended to the south and east forest boundaries providing connections to trail systems in Price and Rusk counties. A trail connection will be evaluated to provide access to facilities and services (gas, food, and lodging) where these are limited within the forest. Snowmobile/ATV trail facilities will be upgraded to accommodate users' needs and enhance sustainability. Additional parking is proposed north of Highway 70. One snowmobile trail expansion will provide an additional trail crossing at Price Creek Rd. An auto tour route is planned to interpret forest resources and management, and educate visitors about public benefits and opportunities.

### Non-Motorized Recreation

River recreation – canoeing, kayaking, fishing, camping and sightseeing – will be maintained and enhanced along on the famous Flambeau River canoe trail. A linear hiking /backpack trail will be developed to parallel the river and run the length of the forest. Hunter-walking trails in the forest will be maintained at their present level. Campground nature trails will be rejuvenated. The Oxbo area will be redeveloped to provide summer and winter recreational opportunities. A new interpretive trail is planned in association with the Bass Lake Wilderness area. An ADA accessible trail will be developed where opportunity allows.

### Hunting, Fishing, and Trapping

The state forest will continue to offer abundant opportunities for small and big game hunting and trapping. The diverse landscape of different forest types, lakes and wetlands found on the property will continue to provide important habitats for many game species. Hunter-walking trails will be maintained. Logging roads and non-designated trails will continue to provide hunting opportunities (see access plan). Non-motorized areas where one can seek a more remote, solitary walk-in hunting experience will remain at approximately current levels.

Access to water resources will be maintained at lakes and river corridors throughout the forest to provide opportunities for water recreation, boating, and fishing. Piers will be developed in some locations to enhance opportunities for shoreline fishing.

**Education and Interpretation**

A range of educational activities will be initiated to enhance visitor experience and alert them to the benefits and opportunities provided by Flambeau River State Forest. Preserving the history and traditions of the forest through educational activity is a key objective. Educational activities will enhance the forest's recreational niche by encouraging responsible behavior and use of forest resources. Information facilities will be installed or upgraded at key public contact points, landings and trail-heads.

**BOUNDARY EXPANSION**

The current project boundary of the state forest is 91,000 acres, with few private inholdings (approximately 5,000 acres). The proposed boundary expansion will provide the basis for land acquisition from willing sellers. It includes 6 expansion opportunities totaling approximately 38,000 acres. Expansion focuses on protection of water resources and providing contiguous blocks of forested land for a wide range of opportunities, including protection of high conservation value forests and unique habitats and providing public access for recreation. The areas selected will provide greater ecological, economic, and social values for the property and region.

## PROPERTY VISION AND GOALS

### VISION STATEMENT

The Flambeau River State Forest is a healthy, dynamic forest that contributes to the diversity of natural communities in the region. The forest is managed for present and future generations to provide ecological, cultural, social and economic benefits within its capabilities. Emphasis is placed on the Flambeau River by protecting and enhancing the predominantly undeveloped shoreline and aquatic resources while providing recreational opportunities consistent with its scenic beauty and remote setting. The forest is managed in consultation with federal, tribal, local, and other governments; and with the people who care about the forest, including those that live, work, and recreate around it.

### PROPERTY GOALS

- Maintain and enhance the undeveloped, remote scenic beauty of the state forest, especially those areas visible from the river, trails, and public roadways.
- Maintain and enhance Flambeau River State Forest's historic tradition as a "river trail", including opportunities to access and experience wild and remote river travel.
- Maintain and enhance the aquatic resources of the forest, especially along shorelands of undeveloped lakes and the Flambeau River.
- Manage the property within the ecological capability of the land using principles of ecosystem management and sustainable forestry.
- Collaborate in forest research and demonstration to advance sustainable land management practices regionally and statewide. Develop and demonstrate productive forest management practices that protect and enhance water quality, soils, wildlife habitat and natural communities.
- Provide renewable forest products by practicing third-party certified, sustainable forest management.
- Provide a diversity of natural communities and wildlife habitats consistent with the forest's capabilities and property goals, including diverse forest types and age classes, with an emphasis on communities that are unique to the Flambeau River State Forest.
- Protect endangered and threatened species, biological diversity and areas of geological, archeological, or cultural significance.
- Manage invasive plants, animals, insects and diseases that affect overall forest health.
- Provide opportunities for hunting, fishing, trapping, and wildlife viewing.
- Provide opportunities for motorized and non-motorized outdoor recreational activities that are compatible and can be sustained without harm to the trail network and forest ecosystems.
- Prevent and minimize conflicts between diverse interests by balancing research, forest management, and recreational uses.
- In consultation with tribal governments, provide for the availability and enhancement of treaty resources.
- Land acquisition will be considered when it provides opportunities to connect to other public lands, protects additional shoreline, water resources, and other important natural resources or features, and provides opportunities to connect trail systems.

## LAND MANAGEMENT CLASSIFICATIONS AND AREAS

The Flambeau River State Forest has been divided into 18 land management areas: six Forest Production Management Areas, ten Native Community Management Areas, one Habitat Management Area, and one Scenic Management Area. In addition to these land management areas, there are three Overlay Zones: Flambeau River Shoreland Management, Long-term Research, and Wild and Wilderness Lakes. Each management area describes a future desired condition that considers soils, topography, community type, and other factors which shape the objectives and management actions for each area. Management classifications and areas are shown on Map 2.1: Planned Land Management Areas.

Each management area has specific short-and long-term objectives that articulate the future desired condition based on the ecological capabilities. Because forests and landscapes change slowly, actions taken, or not taken, over the next 15 years may require 50-100 years to affect the forest as a whole. The long and short term objectives, as written, reflect the intent and ability to meet those objectives under ideal conditions. Biotic factors such as poor regeneration or lack of crop trees for some species, major wind events, and climate change may impact the ability to meet the stated objectives.

Each Land Management Area contains the following information:

- Overview and summary
- Description of the forest resource
- Current and projected land cover
- Soils and Habitat Types
- Short and long term objectives
- Management prescriptions

### Overlay Zones

An overlay zone is a planning tool that allows for additional management prescriptions that can span multiple management areas. It is most often used when there is a particular resource that requires additional prescriptions to meet the objectives of the zone. The objectives and management prescriptions for overlay zones are in addition to the objectives and management prescriptions for the underlying management area.

- Flambeau River Corridor Overlay Zone
- Long-Term Research Overlay Zone
- Wild and Wilderness Lakes Overlay Zone
- State Natural Area

Land Management Areas	
Forest Production Management Areas	Acres
Area 1: Exeland Plains Hardwoods	27,000
Area 2: Wet-Mesic Hardwoods	16,000
Area 3: River Sands Mixed Hardwoods	13,000
Area 4: Back Country Hardwoods	5,100
Area 5: Jump River hardwoods	6,000
Area 6: Big Block	1,400
Native Community Management Areas	
Area 7: Barnaby Rapids	300
Area 8: North Fork Pines	100
Area 9: Oxbo Pines	300
Area 10: Hanson Lake Complex	500
Area 11: Swamp Lake	1,200
Area 12: Bass Lake and Muskeg	2,100
Area 13: Hackett Creek Wetlands	1,300
Area 14: Flambeau Forks Interior Forest	1,300
Area 15: Lake of the Pines Conifer Hardwoods	200
Area 16: Flambeau River Hardwood Forest	300
Habitat Management Area	
Area 17: Ruffed Grouse Habitat	4,000
Scenic Management Area	
Area 18: Flambeau River Scenic Area	16,000
Overlay Zones	
Flambeau River Shoreland Overlay	5,000
Wild Lakes Overlay	400
Wilderness Lakes Overlay	1,400
Long-Term Research Overlay	1,200
State Natural Area	500
<b>Total Acres</b>	<b>97,100</b>
*Acreages have been rounded to the nearest hundred	
**Total acres includes private ownership	
***Total acres excludes overlay zones	

## FOREST PRODUCTION MANAGEMENT AREAS

The general management objective of the forest production areas is the sustainable production of forest products. Forest production areas also meet a wide range of ecological, aesthetic, wildlife, and recreation objectives. The specific objectives for any given management area may vary depending on site capability, forest types, and societal needs. Desired associated benefits, desired future conditions, adjacent land uses, and local economic conditions all influence the objectives as well.

In addition, under limited or special circumstances, in areas of high recreation use or scenic value and where site conditions allow, management can promote the production of timber on extended rotations in a manner that promotes long-term visual appeal. Management activities may promote the development and maintenance of certain ecological attributes to protect and enhance unique habitats.

Forest management by cover type will be included in the Draft Plan. However, it should be noted that invasive species control will continue to be an important component of land management. This may include the use of herbicides, burning, pulling, or other control methods as needed. Forest regeneration continues to be a challenge across the property due to a variety of factors, including: wind throw, deer browse, and climate change. As a result, regeneration of desirable species is unreliable and limited. Management options are often limited and standard management techniques, such as gap management in northern hardwood stands is not applicable on all sites on the FRSF. In some areas of the forest, there is a tendency for less desirable species such as ironwood, musclewood, sedge and raspberry to occupy and dominate gaps when there is unreliable source of northern hardwood regeneration. Gap management can be applied where there is abundant northern hardwood regeneration present throughout the stand.

Forest Production Management Areas	
Area Name	Acres
Area 1: Exeland Plains Hardwoods	27,000
Area 2: Wet-Mesic Hardwoods	16,000
Area 3: River Sands Mixed Hardwoods	13,000
Area 4: Back Country Hardwoods	5,100
Area 5: Jump River Hardwoods	6,000
Area 6: Big Block	1,400
<b>Total</b>	<b>68,500</b>

## AREA 1: EXELAND PLAINS HARDWOODS

### Overview and Summary of the Area

This area is approximately 27,000 acres and covers almost 1/4 of the entire forest. High or perched water tables and shallow rooting depth make soils in this area very susceptible to wind throw. The effects of several large wind events can be seen throughout this area, from the blowdown of 1977 to more recent events. Many small pockets of old-growth hemlock are scattered throughout the area, although much of the area is covered by northern hardwoods. The area also contains a Long-Term Research Overlay Zone, with sites located in the central part and southwestern part of the forest.

#### Summary

- 27,000 acres
- Soils prone to windthrow
- Area covers approximately 1/4 of the forest
- Small groves of old-growth hemlock
- Hardwood regeneration limited

### Description of the Forest Resource

Approximately 41% of this area is in northern hardwoods of average quality in the poletimber and small sawlog size classes. Scattered throughout this area are remnant pockets and individual large diameter trees that have withstood major wind events and that vary in quality. Wind events have created numerous, and in some cases large, canopy gaps with marginal regeneration success. Aspen covers almost 20% of this area with varying age classes, although most are 30 years old. Northern hardwoods and balsam fir seem to be the dominant secondary type within aspen stands. Wetlands, both forested and unforested are well represented here, covering approximately 20% of the area. Over half of the forested wetlands contain black spruce, with only 4% being in white cedar. Swamp hardwoods cover approximately 7% of this area with limited regeneration. Only about 3 % of the area is identified as predominately hemlock/ hemlock hardwood forest. These stands are relatively small and are unique, scattered inclusions through-out the area and are passively managed. The remaining 5% of the area is made up of a small percentage of balsam fir, white spruce and red and white pine. The white pine is primarily large diameter trees  $\geq 100$  years with little natural regeneration. Most of the red pine is in plantations with an average age of 55 years. Plantations with a predominately northern hardwood understory will be converted while others will be maintained.

### Current and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	41%	41%
Aspen	19%	20%
Forested Wetlands	12%	12%
Swamp Hardwoods	7%	6%
Hemlock	3%	3%
Balsam Fir	2%	2%
White Spruce	2%	2%
Red and White Pine	1%	2%
Red Maple	1%	1%
<b>Non-forested</b>		
Wetlands	10%	10%
Upland	2%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested wetlands include tag alder and kegs. Non-forested uplands include upland brush and grasses.		

**Land Type Associations**

The land type associations in this area are Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the forest falls under this land type association. The characteristic landform pattern of Flambeau silt capped Drumlins is rolling drumlins with swamps common, and soils are predominantly moderately well drained silt loam over acid sandy loam till.

**Soils**

Sconsin, Butternut, and Chequamegon are the major soils in this area along with large areas of muck/organic soils. Forest stands on these soils are prone to wind damage due to restrictive layers limiting rooting development. The depth to a restrictive layer can be as little as 20 inches.

**Habitat Types**

There are two primary habitat types within this area: AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

**Long Term Objectives**

Northern hardwoods will remain the dominant cover type. Existing stands will be maintained and enhanced to increase age diversity while maintaining a diversity of forest cover types and ages for forest health, aesthetic appeal, and wildlife habitat. White pine, hemlock, and cedar components will be maintained for large diameter trees and older forests. Wind events may change the proportion of mid-late successional species to early successional species.

**Short Term Management Objectives**

- Maintain and enhance existing stands of northern hardwoods.
- Maintain high quality red maple in northern hardwood stands to increase species diversity.
- Encourage and promote yellow birch, basswood, ash, and other mid-tolerant species where seed sources exist.
- Maintain a diversity of forest cover types and age classes for overall health of the forest, aesthetic appeal, and to provide wildlife habitat.
- Improve sawlog quality in northern hardwood stands.
- Continue silvicultural trials to improve the establishment of natural regeneration.
- Encourage understory development and diversity
- Limit gap management on sites with poor regeneration.
- Maintain aspen in mixed stands.
- Maintain current levels of pine, tamarack, hemlock, cedar, balsam fir, and spruce.
- Evaluate wind damaged stands for adequate crop tree stocking levels.
- Provide research opportunities consistent with area management objectives

**Management Prescriptions**

- Convert northern hardwoods to uneven-aged management where site and stand conditions allow.
- Even-aged management may be considered on northern hardwood sites where crop trees are lacking to achieve long-term uneven aged stand management. Even-aged management methods include overstory removal and shelterwood cuts.
- Mechanical site preparation will be done as needed. Mowing, scarification, herbicide or other methods may be utilized to enhance regeneration.
- Use standard single tree selection (and no gap management) when little northern hardwood regeneration is present and less desirable species can dominate.
- Use gap management techniques when abundant northern hardwood regeneration is present.
- Artificial regeneration of pine or spruce or other appropriate species will be considered where natural regeneration is absent or in canopy openings generally >5 acres.
- Encourage natural regeneration through site preparation for mid-tolerant species such as basswood, ash, and birch.

**Alternatives Considered**

1. Emphasize management for late or early successional species.

This was not chosen because soils are prone to wind damage, causing a dynamic system of early to late successional forests.

2. Less emphasis on red and white pine.

This was not chosen because red and white pine will increase structural diversity and ecological benefits.

3. Maintain all non-forested openings.

This alternative was not chosen because openings generally >5 acres will be planted for better connectivity and diversity of the forest.

## AREA 2: WET-MESIC HARDWOODS

### Overview

This area is approximately 16,000 acres and represents the wet, red maple forest type on the forest. Extensive muck/organic soils, which are very prone to wind damage, characterize this area. Much of this area was affected by the 1977 windstorm. Forested wetlands, swamp hardwoods, red maple, northern hardwoods and aspen are major components in this area.

### Summary of the Area

- 16,000 acres
- Wet soils with extensive wetlands
- Damaged in the 1977 windstorm

### Description of the Forest Resource

Forested wetlands constitute approximately 21% of this area and are primarily poletimber sized black spruce and tamarack along with some sawlog sized cedar stands over 100 years old. Unforested wetlands cover approximately 11% of the area, primarily palustrine wetlands consisting of marshes, sedge and scrub/shrub types. Northern hardwoods cover approximately 20% of the area. Quality varies, from poorer quality hardwoods found in transition areas from upland to lowland sites. Regeneration in northern hardwood stands is in most cases inadequate without scarification. Swamp hardwoods cover 19% of this area. These stands are primarily small sawtimber stands with some sawtimber sized stands throughout the area. Ages of the swamp hardwood on average are between 50-100 years old. Aspen covers approximately 15% of this area. Aspen stands in this area are relatively young. Approximately 80% of the stands are 35 years or younger. Red maple, an important cover type on the forest, covers 8% of the area. Scarification is necessary in many stands due to a lack of regeneration. The quality of the red maple is variable, ranging from larger diameter stands to pole sized trees, with the poorer quality trees exhibiting multiple stems or a root-sprung condition due to previous wind events. Hemlock only covers about 2% of the area, in a range of size classes, unlike other stands on the forest. White spruce plantations also cover 2% of the area, ranging in age from 20-60 years old. Red and white pine is underrepresented in this area with both species covering less than 1% of the area. The red pine is in plantations that are 50-75 years old, with stand size averaging 15 acres. The white pine stands are natural stands with large diameter trees. The acreage of the white pine stands average 25 acres.

### Current and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Forested Wetlands	21%	21%
Northern Hardwoods	20%	20%
Swamp Hardwoods	19%	19%
Aspen	15%	16%
Red Maple	8%	7%
White Spruce	2%	2%
Hemlock	2%	2%
Red and White Pine	1%	1%
<b>Non-forested</b>		
Wetlands	11%	11%
Uplands	1%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested wetlands include tag alder and kegs. Non-forested uplands include upland brush and grasses.		

**Land type Associations**

The land type associations in this area are Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. The characteristic landform pattern of Flambeau silt capped Drumlins is rolling drumlins with swamps common. Soils are predominantly moderately well drained silt loam over acid sandy loam till.

**Soils**

The major soils in this area are comprised of very poorly drained muck. The parent material of these soils is herbaceous organic material more than 51 inches thick. There is a fair amount of Magnor, very stony-Magnor complex. This complex is somewhat poorly drained. Ossmer and Pesabic are also somewhat poorly drained soils that are scattered throughout this area. The scattered uplands in this area are mostly on Sconsin soil along with small areas of Freeon and Chequamegon soils.

**Habitat Types**

The primary habitat type is ArAbCo (Red maple-Balsam fir/Bunchberry). Other habitat types in this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh) and TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread).

ArAbCo (Red maple-Balsam fir/Bunchberry) has a wet-mesic moisture regime with a medium nutrient regime. This habitat type is strongly associated with silt loams that are subject to a high water table, therefore there is a high chance for “swamping,” or flooding. This type is best suited for balsam fir, white spruce, aspen, and red maple. Habitat diversity could be improved by increasing the conifer component on this type. Windthrow is the primary disturbance factor due to shallow rooting on the somewhat poorly drained soils. The herb layer is moderately well developed with a lack of species diversity.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread) has a mesic to wet-mesic moisture regime and a medium nutrient regime. Aspen, red maple, white birch, and yellow birch grow well on this type. Sugar maple, basswood, and white ash typically display poor vigor and quality and are not well represented on this type. Conifers are almost a constant component of stands on this type. There is a chance for “swamping” on soils associated with this type. Windthrow is almost always a potential hazard on this type. Herb layer is composed primarily of species characteristic of northern forests and raw humus substrate.

**Long Term Objectives**

Maintain the extensive high quality complex of native wetland community types in this management area. Coniferous forest types will be maintained to provide valuable habitat for a wide variety of conifer-dependent wildlife species. Red maple and swamp hardwoods will decrease due to regeneration challenges while aspen acreages are expected to increase. Planting of white and black spruce along with other appropriate species may be needed to maintain a forested cover type.

**Short Term Management Objectives**

- Maintain the diversity of forest cover types and age classes for overall health of the forest, aesthetic appeal, and to provide wildlife habitat.
- Increase aspen when mixed with red maple and lower quality hardwoods due to regeneration challenges, especially in transition zones between uplands and wetlands.-
- Maintain and enhance quality northern hardwoods on appropriate sites.
- Maintain aspen in mixed stands.

- Openings generally less than 5 acres shall be allowed to naturally regenerate unless identified as a maintained wildlife opening.
- Develop a diversity of ages and stand sizes for red maple, swamp hardwoods, aspen, and northern hardwoods.
- Retain and encourage yellow birch, white pine, hemlock and northern hardwood components on red maple dominated sites.
- Increase the presence of large, longer lived trees such as white pine on suitable sites.
- Maintain red maple on sites with adequate natural regeneration or where appropriate. For areas with little or no regeneration, encourage and allow other tree species to predominate, including aspen, northern hardwoods, or other desirable species.
- Continue regeneration trials in conifer wetlands, red maple, and swamp hardwood types.

**Management Prescriptions**

- Manage yellow birch, white pine, hemlock and northern hardwood components on red maple dominated sites. Some harvesting of these species is permitted to meet stand goals and management objectives.
- Even-aged management of northern hardwoods where crop trees are lacking shall consist of the following methods: overstory removal and shelterwood cuts. Site preparation may be required in some areas.
- Harvest aspen surrounding areas  $\leq 5$  acres for natural regeneration to reduce edge effect.
- Mowing, scarification, herbicide application or other methods may be utilized if regeneration is lacking to meet management objectives in red maple and northern hardwood stands. Strip cuts may be used in swamp hardwoods and conifer wetlands.
- Use coppice techniques to regenerate aspen in mixed stands as necessary to ensure regeneration after salvage operations.

**Alternatives Considered**

1. Less emphasis on early successional species.

This was not chosen due to poor regeneration in red maple and swamp hardwood stands. Early successional species such as aspen provide a better opportunity for regeneration.

2. Include this area with the Exeland Plains Hardwoods.

This was not chosen because the soils in this area are significantly wetter.

## AREA 3: RIVER SANDS HARDWOODS

### Overview and Summary of the Area

This area is approximately 13,000 acres and tends to follow the Flambeau River corridor. Much of the area is in the northern part of the forest near Oxbo along Highway 70. There are a number of lakes here, including: Oxbo, Pelican, Mason, and Evergreen.

#### Summary

- 13,000 acres
- Sandy loam soils
- Greatest opportunity for increasing white and red pine
- Most of this area is in the northern portion of the forest

### Description of the Forest Resource

Aspen and northern hardwoods are the two dominant community types, comprising 25% and 45% of the area respectively. The northern hardwoods are primarily poletimber and small sawtimber stands, with excellent regeneration, especially of sugar maple and ash species. The aspen is primarily pole size with secondary types of balsam, spruce, white pine, or northern hardwoods and ranges in age from 20-80 years old, with the overmature stands located within a ¼ mile of the river. Some stands exhibit low level regeneration of white pine, balsam fir, and northern hardwoods. White pine and red pine together cover approximately 8% of the area. The white pine is primarily large sawtimber, ≥100 years of age. Secondary types within white pine stands include aspen, fir-spruce, and northern hardwoods, with some stands showing a low density of white pine regeneration. The red pine is primarily small sawtimber size with good growth potential. The majority of pine stands within the forest are located in this area and along the river. There are equal amounts of hemlock, swamp hardwoods, white spruce, and white birch; each covers about 2% of the area. Balsam fir is a minor component, covering only 1% of the area. Forested wetlands cover approximately 6% of the area and is primarily black spruce, tamarack, and some cedar, with the tamarack having better growth potential than black spruce and cedar. Unforested wetlands cover 5% of the area. Unforested uplands include upland brush and grass openings in 2% of the area.

### Current and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	45%	45%
Aspen	25%	25%
Forested Wetlands	6%	6%
Red Pine	4%	5%
White Pine	4%	5%
Hemlock	2%	2%
Swamp Hardwoods	2%	2%
White Spruce	2%	2%
White Birch	2%	2%
Balsam Fir	1%	1%
<b>Non-forested</b>		
Wetlands	5%	5%
Uplands	2%	<1%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested wetlands include tag alder and marsh. Non-forested uplands include upland brush and grasses.		

**Land Type Associations**

The land type associations in this area are Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. The characteristic landform pattern of Flambeau silt capped Drumlins is rolling drumlins with swamps common. Soils are predominantly moderately well drained silt loam over acid sandy loam till.

**Soils**

Pence and Shanagolden soils are the major soils in this area along with Padus and Vilas-Lindquist complex. Soils in this area are not prone to wind damage, with the depth to the restrictive feature greater than 60 inches.

**Habitat Types**

There are three primary habitat types in this area: PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla), AVVb (Sugar maple/Blueberry-Maple-leaved viburnum), and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla) has a dry to dry-mesic moisture regime and poor to medium nutrient regime. This type is particularly suited for management of pines, because growth potential for these species is high and competition pressure from understory vegetation and shade tolerant hardwoods is relatively low. White pine is sufficiently shade-tolerant to regenerate in the understory of most communities that typically develop on this habitat type. Aspen and white birch could also be considered, depending on site goals. Historically, pure and mixed stands of pine were most prevalent with white pine being well represented. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is often well-developed and dominated by beaked hazel.

AVVb (Sugar maple/Blueberry-Maple-leaved viburnum) has a dry-mesic moisture regime and a medium nutrient regime. This type was dominated by white and red pine in the pre-logging era and it is still common to see large charred stumps. Aspen, white birch, red oak and red maple appear to be well suited for this type. In the absence of disturbance, stands on this type are often gradually taken over by sugar maple, but this type is suboptimal for growth and yield of sugar maple. In some areas, white pine can be abundant in the understory where a seed source is present and conditions are favorable. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is typically diverse and well-developed.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

**Long Term Objectives**

Early successional forest types will be maintained as a strong component of the landscape. Mixed stands with aspen will see the proportion of aspen increased naturally. Across this management area, there will be an increase in the presence and age of red and white pine on suitable sites, with an emphasis on regenerating natural stands of red and white pine. Current levels of red pine plantation acreage will be maintained. The northern hardwood component will be maintained on appropriate sites and where possible, will be converted from even-aged to uneven-aged management.

**Short Term Management Objectives**

- Maintain the diversity of forest cover types and age classes for forest health, aesthetic appeal, and wildlife habitat.
- Maintain or increase aspen in mixed stands
- Maintain red and white pine, hemlock, and cedar for species diversity
- Promote the growth and retention of large red and white pine in mixed and natural stands

- Maintain the conifer component in mixed stands
- Maintain high quality northern hardwoods
- Retain oak on suitable sites
- Promote regeneration of mid-tolerant species such as basswood, ash, and birch within northern hardwood stands
- Maintain reserve trees and islands to promote travel corridors and age class diversity among managed even-aged aspen stands

**Management Prescriptions**

- Maintain or increase natural stands of red and white pine through shelterwood cuts and site preparation. Increase pine component on upland openings generally  $\geq 5$  acres.
- Natural conversion techniques such as crop tree release through thinning and scarification around existing seed sources may be used to maintain and increase red and white pine.
- Even-aged management of northern hardwoods where crop trees are lacking would include the following methods: overstory removal and shelterwood cuts. Site preparation may be required in some areas.
- Oak retention will include releasing crop trees through single tree selection and scarification around existing seed sources.
- Regenerate mid-tolerant species such as basswood, ash, and birch using gap management and scarification techniques where sites and stands are suitable. This area has the best opportunity to maintain mid-tolerant species, which are lacking on more mesic sites in the forest.

**Alternatives Considered**

1. Allow red and white pine to naturally fall out of the forest system.

This alternative was not chosen because red and white pine are unique to this area and provide diversity in the landscape.

2. Less emphasis on planting non-forested uplands.

This alternative was not chosen because planting would improve the connectivity of the area and provide greater diversity.

3. Less emphasis on early successional forests.

This alternative was not chosen because soils and habitat types in this area indicate an opportunity for early successional forests compared to other areas of the forest.

## AREA 4: BACK COUNTRY HARDWOODS

### Overview

This area is approximately 5,100 acres and is divided into 2 blocks; the Butternut Creek Area (3,100 acres) in the northeast part of the forest and the Bear Creek Road Area (2,072 acres) in the southern part of the forest. Unique to this area is limited motorized vehicle access (for management purposes only) and winter only timber harvesting. Northern hardwoods will be an important component to retain in this area, along with maintaining and increasing conifer species.

### Summary

- 5,100 acres
- Small old-growth hemlock groves
- Many small streams and drainages
- Limited motor vehicle access promoting a remote back-country experience
- Winter only harvesting

### Description of the Forest Resource

Northern hardwoods cover approximately 47% of this area, ranging in size from seedling/sapling to large sawtimber. The average size of northern hardwood stands in this area is 43 acres, varying in quality and regeneration. The second largest cover type here is forested wetlands (17%), primarily black spruce and tamarack with an average age of 80 years, and low growing potential. A large, older stand of cedar (>50 years) of (79 acres) is found near Butternut Creek. Young aspen makes up 10% of this area with an average age of 28 years with good growth potential. Red maple covers 9% of the area and swamp hardwoods 5%, with an average age of about 70 years and medium growth potential for both species. Hemlock inclusions are a minor, but important component in this area, covering 3% of the area. These large sawtimber stands average approximately 100 years old on stands up to 20 acres. White pine covers only 2% of the area, in small and large sawlog size classes. White pine and cedar are the most underrepresented conifers in all sizes and ages here.

### Current and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	47%	47%
Forested Wetlands	17%	17%
Aspen	10%	11%
Red Maple	9%	8%
Swamp Hardwoods	5%	5%
Hemlock	3%	3%
White Pine	2%	3%
<b>Non-forested</b>		
Wetlands	5%	5%
Uplands	2%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested Wetlands include tag alder and kegs. Non-forested uplands include upland brush and grasses.		

**Land Type Associations**

Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03) are the land type associations for this area. The characteristic landform pattern of the Exeland Plains is undulating outwash plains with predominantly well drained silt loam over outwash soils. The majority of the FRSF falls under this land type association. The characteristic landform pattern of the Flambeau silt capped Drumlins is rolling drumlins with wetlands common with predominantly moderately well drained silt loam over acid sandy loam till soils.

**Soils**

Sconsin, Butternut, and Chequamegon are the major soils in this area along with large areas of muck/organic soils. Forest stands on these soils are prone to wind damage due to restrictive layers limiting root development. The depth to a restrictive layer can be as little as 20 inches.

**Habitat Types**

There are two primary habitat types in this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity on this habitat type if competition is controlled. Northern hardwoods have excellent productive potential and competitive advantages on this habitat type. The herb layer is often developed and species rich with an undeveloped shrub layer.

ATM has a mesic to dry-mesic moisture regime and a medium nutrient regime. Sugar maple, basswood, white ash, yellow birch, and hemlock exhibit productive and competitive advantages on this type. Other species with excellent productivity but limited competitive abilities on this type include red maple, red oak, and white pine. Following intense disturbance, aspen and paper birch are often pioneer species with excellent productivity. Herb species characteristic of mesic, nutrient-rich sites occur only sporadically on this habitat type. The shrub layer is moderately well developed in younger and early successional stands, but is poorly represented in older stands.

**Long Term Objectives**

Motorized vehicle access will be restricted to forest management and game improvement projects. This area will provide a public backcountry recreational experience and provide walk-in hunting opportunities. Northern hardwoods will remain the dominant cover type with scattered pockets of early to mid-successional species and older hemlock stands. White pine, hemlock, and cedar components will be maintained for large diameter trees and older forests.

**Short Term Management Objectives**

- Restrict timing of harvest activities to winter only.
- Maintain northern hardwoods
- Maintain a diversity of forest cover types and age classes with northern hardwoods as the dominant cover type for forest health, aesthetic appeal, and wildlife habitat.
- Maintain high quality red maple as a compositional component in northern hardwood stands.
- Encourage yellow birch, basswood, and ash and other mid-tolerant species where seed sources exist.
- Improve saw log quality in northern hardwood stands.
- Improve regeneration of all cover types.
- Limit gap management techniques on sites absent of regeneration
- Maintain aspen in mixed stands to biological rotation age

- Maintain pine, tamarack, hemlock, cedar, balsam fir, and spruce at current levels
- Maintain red and white pine, hemlock, and cedar

**Management Prescriptions**

- Maintain access for management purposes only. Gates will be maintained or placed to limit access on existing logging roads.
- Develop uneven-aged management for northern hardwoods through gap management and thinnings. Site preparation may be required in some areas.
- Conduct timber harvests from December 1<sup>st</sup> to March 31<sup>st</sup>.
- Regenerate mid-tolerant species such as basswood, ash, and birch using gap management and scarification techniques where sites and stands are suitable.
- Mowing, scarification, herbicide application or other methods may be utilized.
- Coppice aspen in mixed stands as necessary to ensure regeneration after salvage operations.
- Evaluate crop tree stocking in wind damaged stands
- Use standard single tree selection (and no gap management) when little northern hardwood regeneration is present and less desirable species can dominate.
- Use gap management techniques when abundant northern hardwood regeneration is present.

**Alternatives Considered**

1. Include the Big Block Area in the Back Country Hardwoods Management Area. This was not chosen because the Big Block is in an earlier successional stage compared to the Butternut Creek and Bear Creek areas.
2. More emphasis on early successional forests. This alternative was not chosen because of the soils and habitat types favoring more of a Northern Hardwood type in these areas. Another reason this alternative was not chosen was that the northern parcel of this area is suitable habitat for the American marten. The American marten prefers a mixture of conifers and deciduous trees including hemlock, yellow birch, maple, fir, and spruce.
3. Have no limit on harvesting time periods. This was not chosen because the area would not provide an area for hiking and back pack camping during peak recreational periods without interruption from timber sales.
4. Allow an all-season public road into this area. This alternative was not chosen because this area was identified in the road access plan as an area to keep somewhat remote.

## AREA 5: JUMP RIVER HARDWOODS

### Overview

This area is approximately 6,000 acres and is located in the southern most portion of the forest. This area has several unique features that are attributed to a different land type association than the rest of the forest. The most diverse presence of species found on the forest can be found here. Soils are also much less susceptible to wind throw and support a range of unique mid-tolerant tree species such as northern red oak, bitternut hickory and butternut. This area also contains an extensive mesic to wet-mesic hemlock, yellow birch and white pine dominated forest along a two mile stretch of George Ladd Creek. There is also a long-term research overlay zone here along Hervas Road.

### Summary of the area

- 6,000 acres
- Nutrient rich soils
- Well developed herbaceous and shrub layers
- Rich diversity of species including butternut, bitternut hickory, and oaks

### Description of the Forest Resource

Quality northern hardwoods of varying sizes and ages cover 37% of this area. Red oak, bitternut hickory, and butternut are all at the northern end of their range as mid-tolerant species in northern hardwood stands. Most of the butternut suffers from butternut canker disease, which eventually girdles and kills infected trees. Aspen covers 28% of this area with an average age of 40-45 years with good growth potential. In aspen stands, northern hardwoods, red maple, and balsam fir are common secondary types. Swamp hardwoods and red maple types cover about 10% of this area, with black ash stands having 2-3 age classes, some 120 years or older. Generally, these stands will be managed for pulp and bolts. Average age of the red maple in this area is close to 70 years. Growth potential for red maple is good; however, regeneration in swamp hardwoods and red maple has been difficult without scarification. Unforested wetlands cover 10% of the area, most of which is lowland brush – alder. Hemlock covers about 5% of the area, with numerous patches of good quality hemlock, especially near Hervas Road. Hemlock stands range in size from 1- 52 acres, although most average 20 acres. There is also 63 acres of white cedar located in 3 different stands, which serve as a deer yards. The cedar along with black spruce, tamarack, and balsam fir cover about 5% of the area. Large sawtimber (≥100 years) white pine stands represent 3% of the area. Red pine and white spruce are scattered throughout mixed stands.

### Current and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	37%	38%
Aspen	28%	29%
Swamp Hardwoods	6%	6%
Forested Wetlands	5%	5%
Hemlock	5%	5%
Red Maple	4%	3%
White Pine	3%	3%
<b>Non-forested</b>		
Wetlands	10%	10%
Uplands	2%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested wetlands include tag alder and kegs. Non-forested uplands include upland brush and grasses.		

**Land Type Associations**

The land type associations in this area are Exeland Plains (212Xd03) and the Jump River Ground Moraine (212 Xd05). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. The characteristic landform pattern of Jump River Ground Moraine is undulating moraine and stream terraces. Soils are predominantly somewhat well drained silt loam over dense, acid sandy loam till. This land type association is only found along portions of the southern edge of the forest.

**Soils**

The major soils in this area are comprised of Magnor, very stony-Magnor complex and the Freeon, very stony-Freeon complex. The Magnor complex is somewhat poorly drained, while the Freeon complex is moderately well drained. Both complexes are silt loam over sandy loam. The Capitola-Cebana complex is scattered throughout this area also. This complex is very poorly drained and has about 5" of muck over silt loam, which is over sandy loam. Another scattered soil in this area is comprised of very poorly drained muck. The parent material of this soil is herbaceous organic material more than 51 inches thick. The Capitola-Cebana complex and the muck are both susceptible to wind due to wetness along with a restrictive layer below 40".

**Habitat Types**

There are three habitat types within this area: ArAbCo (Red maple-Balsam fir/Bunchberry), AOCa (Sugar maple/Sweet cicely-Blue cohosh), and TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread).

ArAbCo (Red maple-Balsam fir/Bunchberry) is strongly associated with silt loams that are subject to a high water table. This type is best suited for balsam fir, white spruce, aspen, and red maple. Windthrow is the primary disturbance factor on this type due shallow rooting on the somewhat poorly drained soils. The herb layer is moderately well developed and relatively species poor.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. Red oak can also grow exceptionally well but regeneration is usually limited to gaps due to absence of major disturbance. The herb layer is often developed and species rich, with an undeveloped shrub layer.

**Long Term Objectives**

High quality northern hardwoods and aspen will predominate in this area. Hemlock/hardwood inclusions throughout the area will provide larger, older trees and structural attributes consistent with older forests. This area of the forest will increase in forest composition, age, and vertical structure.

**Short Term Management Objectives**

- Maintain and enhance existing stands of northern hardwoods
- Increase age and maintain a diversity of forest cover types and age classes for forest health, aesthetic appeal, and wildlife habitat
- Improve saw log quality of northern hardwood stands
- Maintain aspen in mixed stands
- Maintain and increase white pine
- Increase and maintain northern red oak, hickory, and butternut
- Provide opportunities for research consistent with area management objectives
- Increase mid-tolerant species such as basswood, ash, and birch within northern hardwood stands

**Management Prescriptions**

- Even-aged management may be considered on northern hardwood sites where crop trees are lacking to achieve long-term uneven-aged stand management. Even-aged management methods include overstory removal and shelterwood cuts. Mechanical site preparation will be done as needed.
- Mowing, scarification, herbicide application or other methods will be used as necessary to meet management objectives.
- Use coppice techniques to regenerate aspen in mixed stands as necessary to ensure regeneration after salvage operations.
- Mid-tolerant species will be encouraged through gap management and scarification around existing seed sources.
- Increase white pine through active management on suitable soils including natural and artificial methods.

**Alternative Considered**

1. More emphasis on early successional species.

This alternative was not chosen because regeneration of early successional species reduces regeneration opportunities for desired mid-tolerant species such as basswood, ash, and birch.

2. More emphasis on old forest-extended rotation.

This alternative was not chosen because site conditions are not conducive to old forest-extended rotation.

## AREA 6: BIG BLOCK

### Overview and Summary of the Area

The Big Block Area is approximately 1,400 acres with motorized public vehicle access restricted to promote a backcountry recreational experience. Historically, the Big Block area was occupied by a stand of landmark old growth hemlock-hardwood forest, representing the largest remaining remnant of state-owned old-growth forest. On July 4, 1977, most of this area (approximately 1,300 acres) was blown down by a down burst wind event and was salvaged after

the storm. The area regenerated to aspen and northern hardwoods with a high proportion of low quality rock elm. However, due to extreme weather and microclimatic conditions, the hemlock did not regenerate after the down burst. Regeneration trials have been unsuccessful. In addition, numerous large openings lacking regeneration are present in this area.

Northern hardwoods will be an important component to retain in this area, along with other mid-tolerant species such as basswood, ash, and birch. Due to the 1977 wind storm, there is primarily one age class which is approximately 30 years old. Aspen and other early-mid successional species play a much larger role in this area now than they did previously.

#### Summary

- 1,400 acres
- Opportunity for backcountry recreational experience
- Old-growth hemlock-hardwood forest blown down in 1977 windstorm
- Numerous large openings throughout
- Size class primarily saplings and pole timber

### Description of the Forest Resource

This area is in an early to mid-successional phase. Poor quality seed origin aspen is the primary early successional species here covering 22% of the area. Northern hardwoods cover approximately 63% of the area. There is a high percentage of tree species present providing a rich diversity throughout the area. Tree species present include red oak, basswood, yellow birch, maple, ash, cherry and rock elm, which is a significant component here. Prior to 1977, this area was a closed canopy forest. Unforested uplands comprise about 10% of the area is. Red maple and swamp hardwoods each make up 1% of the area with a minor conifer component.

### Current and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	63%	63%
Aspen	22%	27%
Swamp Hardwoods	1%	1%
Conifers		2%
<b>Non-forested</b>		
Wetlands	1%	1%
Uplands	13%	6%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested wetlands include tag alder and kegs. Non-forested uplands include upland brush and grasses.		

**Land Type Associations**

The land type association in this area is Exeland Plains. The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association covers most of the forest.

**Soils**

Sconsin is the major soil in this area. This soil is prone to wind damage due to restrictive layers limiting rooting development. The distance to a restrictive layer can be as little as 20 inches.

**Habitat Types**

The primary habitat type within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh), which has a mesic moisture regime rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages.

**Long Term Objectives**

Motorized vehicle access will be restricted to forest management and game improvement projects. This area will provide a public backcountry recreational experience and provide walk-in hunting opportunities. Northern hardwoods will be maintained and enhanced to improve age and species diversity and forest health. Aspen, where suitable, will also be maintained for species diversity. The conifer component may be increased through planting especially in the non-forested openings.

**Short Term Management Objectives**

- Provide public non-motor use area that emphasizes backcountry recreational opportunities and walk-in hunting access.
- Increase and maintain existing stands of northern hardwoods
- Increase and maintain yellow birch, basswood, ash, and other mid-tolerant species where seed sources exist
- Increase the conifer component
- Convert unforested uplands generally >5 acres to suitable species such as white pine, spruce, and other appropriate species

**Management Prescriptions**

- Maintain access for management purposes only. Gates will be maintained or placed where needed to limit public vehicular access. Motorized access will be allowed for forest management and forest game habitat improvement projects.
- Even-aged management may be considered on northern hardwood sites where crop trees are lacking. Even-aged management includes prescriptions for shelterwood harvest coupled with site preparation if needed. Future management on these sites could be converted to uneven-aged management.
- Regeneration techniques such as scarification, gap management, or mowing may be used.
- Use thinning and other harvest techniques to release and favor red oak and yellow birch.
- Intermediate treatments such as: tree release, thinning and improvement, salvage and sanitation and pruning may be used to enhance stand composition, structure, growth, health and quality.
- Increase conifer component by appropriate artificial regeneration methods.

**Alternatives Considered**

1. Maintain as a wilderness area.

This was not chosen because this area is no longer a landmark stand of old-growth hemlock-hardwoods. Intermediate treatments can enhance stand composition, structure, growth, health, and quality.

2. Less emphasis on planting non-forested uplands.

This alternative was not chosen because planting non-forested uplands will decrease "edge effect" and increase forest productivity.

3. Allow an all-season public road into this area.

This alternative was not chosen because this area was identified in the road access plan as an area to keep somewhat remote and to provide a back country experience.

## NATIVE COMMUNITY MANAGEMENT AREAS

Native community management areas are managed with the primary objective of representing, restoring, and perpetuating native plant and animal communities, whether upland, wetland, or aquatic and other aspects of native biological diversity. Management activities are designed to achieve land management objectives through natural processes or management techniques that mimic natural processes when possible. Areas that do not have the desired community conditions but have a reasonable potential to be restored to those conditions are included in the Native Community Classification.

Native Community Management Areas	
Area Name	Acres
Area 7: Barnaby Rapids	300
Area 8: North Fork Pines	100
Area 9: Oxbo Pines	300
Area 10: Hanson Lake and Wetlands	500
Area 11: Swamp Lake and Forest	1,200
Area 12: Bass Lake and Muskeg	2,100
Area 13: Hackett Creek Wetlands	1,300
Area 14: Flambeau Forks Interior Forest	1,300
Area 15: Lake of the Pines Conifer-Hardwoods	200
Area 16: Flambeau River Hardwood Forest	300
<b>Total</b>	<b>7,600</b>

## AREA 7: BARNABY RAPIDS FOREST AND WETLANDS

### Overview

Located in the northeastern portion of the forest, this area comprises a bend in the North Fork of the Flambeau River. Area characteristics include a block of mature Northern Mesic Forest with mixed conifers and hardwoods, embedded wetlands and Ephemeral Ponds. The presence of native long-lived conifers on a mesic site is noteworthy since this is a rare condition elsewhere on the forest. This site is located directly adjacent to the river and is within a roadless portion of the forest, further enhancing its ecological value. This site has been used by rare forest birds for several years.

#### Summary

- 300 acres
- Opportunity to develop a forest with old-growth characteristics containing embedded wetlands and Ephemeral Ponds within the context of the river corridor through passive management
- Provides habitat for forest interior wildlife species

### Description of the Forest Resource

Northern Mesic Forest covers approximately 87% of this area, and varies from pure stands of northern hardwoods to mixed conifer-hardwoods. Mature sugar maple, basswood, and yellow birch are the dominant tree species, with trees over 20 inches in diameter common in the eastern portion of the area. The presence of intact structural features such as standing dead snags and abundant coarse woody debris add to the value of this area. In the western portion of the site, just east of the river, large, super-canopy white pines are common and hemlock is dominant. White cedar is also present in this area and covers about 6%. The cedar is mostly large saw size and occurs in mixed stands with hemlock. An undisturbed Ephemeral Pond featuring 18"-20" dbh black and green ash is located adjacent to the mature hemlock hardwoods stand. Black spruce makes up about 2% of the area, and is located in the northern portion of the site. The black spruce is primarily pole size with high growth potential. These wetlands are part of a larger peatland complex that stretches for several miles to the north of the area.

### Current and Projected Cover Types

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
Northern Hardwoods	87%	89%
White Cedar	6%	5%
White Pine	3%	1%
Black Spruce	2%	2%
Tamarack	2%	3%
<b>Total</b>	<b>100%</b>	<b>100%</b>

### Land Type Associations

The characteristic landform pattern of the Exeland Plains (212Xd03) and Flambeau silt capped Drumlins (212Xd02) is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association.

The characteristic landform pattern of Flambeau silt capped Drumlins (212Xd02) is rolling drumlins with swamps common. Soils are predominantly moderately well drained silt loam over acid sandy loam till. This land type association is found along the northern and western portions of the FRSF, and this is the only Native Community Management Area within this land type association.

**Soils**

The major soil in this area is Shanagolden fine sandy loam. This soil is moderately well drained. The other soils in this area cover small, scattered areas. These soils include the poorly drained Cable silt loam, the somewhat poorly drained Peeksville fine sandy loam, and the very poorly drained muck soils of Lupton and Cathro and Loxley and Beseman.

**Habitat types**

The primary habitat types within this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh), and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley). There is a small amount of TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread) within the area also. Currently there are no habitat types assigned to the muck soils.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread) has a mesic to wet-mesic moisture regime and a medium nutrient regime. Aspen, red maple, white birch, and yellow birch grow well on this type. Sugar maple, basswood, and white ash typically display poor vigor and quality and are not well represented on this type. Conifers are almost a constant component of stands on this type. There is a chance for "swamping" on soils associated with this type. Windthrow is almost always a potential hazard on this type. Herb layer is composed primarily of species characteristic of northern forests and raw humus substrate.

**Long Term Objectives**

Maintain a contiguous block of Northern Mesic Forest (northern hardwood and conifer) with old-growth characteristics, embedded wetlands and Ephemeral Ponds. Maintain and protect the integrity of the wetland features and their hydrological connections to the river. Provide habitat for forest interior wildlife species such as Northern Goshawk and American Marten. Use this site as an ecological reference area, providing opportunities for research, education and interpretation.

**Short Term Management Objectives**

- Passively manage this site to develop old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags
- Provide opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study
- Provide for research opportunities, ecological interpretation, and education
- Maintain the remote nature of this area

**Management Prescriptions**

- Passively manage this area, except to clear trails or roads and control invasive species. Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to help meet the objectives of the area.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.

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- Pesticide use will be permitted for invasive species management.
  - Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
  - New recreational features will not be developed in this area
  - New roads or trails will not be developed in this area
  - Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area
  - Existing wildlife openings will be naturally revegetated and no new wildlife openings will be created in this area

**Alternatives Considered**

1. Actively manage this site for timber production.

This alternative was not chosen. The team agreed that this site offers a good opportunity to develop old-growth characteristics, as it contains several desirable qualities including the presence of older trees and other favorable structural features, a complex of community types including wetland types, repeated use by rare animals, close proximity to the river, a relatively remote location away from roads and developments, and a different LTA type than the other mesic forest Native Community Management Areas.

## AREA 8: NORTH FORK PINES

### Overview

Along with Oxbo Pines, this is one of the two largest and best quality examples of white pine dominated forest on the FRSF, each having unique characteristics. This 100 acre area exhibits larger trees, higher canopy closure, a different landscape context, and more mesic conditions than Oxbo Pines. North Fork Pines provides an opportunity to maintain a significant block of white pine forest with old-growth characteristics while protecting a portion of the riverbank. The northern hardwoods will be maintained through active management using old forest-extended rotation techniques. As mature conifer forests are uncommon in the local landscape, this area will provide a valuable benchmark to compare to managed areas throughout the Forest, a unique habitat for animals associated with upland conifer forests, and an ecological connection to both the river and the richer adjoining hardwood forest. Blackburnian Warbler and Pine Warbler are known from the site - both nest in mature conifers and should benefit from the presence of the large pines found here.

### Summary

- 100 acres
- One of the two best examples of natural origin mature pine forest on the property, this one being the more mesic of the two
- Opportunity to develop a significant block of old-growth white pine forest while managing other portions of the site using old forest-extended rotation silvicultural techniques and encouraging regeneration of white pine

### Description of the Forest Resource

This area provides an opportunity to manage a natural white pine stand. The forest here is made up of a block of natural white pine bordered by northern hardwoods to the north and bottomland hardwoods and alder to the south. The pine stand is mostly contiguous mature white pine, although there are at least two small areas that have experienced some wind damage in the past. The openings have retained mature pine but include a thick shrub component and, in some areas, smaller diameter hardwoods such as yellow birch and sugar maple. Large diameter white pine well over 100 years old can be found in the stand. Hardwoods such as sugar and red maple, white and yellow birch, ironwood, red oak, and pole size aspen can be found in the sub-canopy and sapling layers, along with some white pine. There are few white pine seedlings in the understory. The northern hardwoods in this area are primarily small saw and pole sized with sugar maple regenerating in the understory of this hardwood stand.

### Current and Projected Cover Types

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
White Pine	54%	50%
Northern Hardwoods	45%	49%
<b>Non-forested</b>		
Wetlands	1%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>

### Land Type Associations

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

**Soils**

The major soil map unit in this area is Padus sandy loam. This soil is well drained and the depth to the restrictive layer is very deep at more than 60 inches. The Moppet-Fordum complex is also located in this area along the river. This complex is occasionally to frequently flooded but moderately well drained.

**Habitat Types**

The primary habitat type within this area is ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

**Long Term Objectives**

Maintain a block of contiguous old forest dominated by pine and northern hardwoods. Allow the forest to develop structural, compositional and functional characteristics associated with old-growth forest. Assess opportunities to develop regeneration and maintenance of white pine in the future, using tools from the Pine chapter of Old Growth Handbook, currently in preparation. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and potential and known rare species habitats. Maintain the northern hardwood portions of the site through old forest-extended rotation management, while providing characteristics associated with old-growth such as large trees, standing snags, and abundant coarse woody debris.

**Short Term Management Objectives**

- Provide opportunities for research, education, and ecological interpretation, including demonstration of old forest-extended rotation management (60 acres) while maintaining a passively managed ecological reference site (75 acres) dominated by pines.
- Monitor the 75 acre ecological reference area. As this is an uncommon cover type on the forest, it provides opportunities for comparison with actively managed areas found elsewhere on the property.
- Increase tree age throughout the area
- Maintain potential rare species habitats and high-quality natural communities
- Maintain existing red and white pine, cedar, and hemlock whenever possible
- Provide low-impact public access and opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study

**Management Prescriptions**

- Passively manage the 75 acre ecological reference site except for the control of invasive plants.
- Actively manage 60 acres in areas dominated by northern hardwoods using old forest-extended rotation techniques.
- Retain numerous standing dead snags and coarse woody habitat in both the uplands and forested wetlands.
- Protect the advanced regeneration of natural white pine, red pine, cedar, and hemlock.
- Encourage development of the conifer tree species where advantageous and consistent with area objectives.

- Monitor this area within the next 10 years for the presence of additional rare or endangered species, as resources allow.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy including a funding source if any species are found.
- Pesticide use will be permitted for invasive species management.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.
- Wildlife openings will not be created or maintained within this management area.
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to help meet the objectives of the area.

**Alternatives Considered**

1. Actively manage the pine and attempt pine regeneration.

This alternative was not chosen. It was determined that this site has different characteristics from the rest of the property and that it offers a unique opportunity to develop a pine forest with old-growth characteristics. The team acknowledged that although it might be desirable to attempt some form of active management at this site somewhere in the future, it was determined that it would not be necessary during the current planning cycle.

## AREA 9: OXBO PINES

### Overview

This 300 acre Native Community Management area features natural origin, pine-dominated Northern Dry-mesic Forest, an uncommon community in the local landscape. The more mature forested areas have large diameter white and red pine with spruce/fir component imbedded in the forest matrix. White and red pine maintenance and enhancement will be important in this area while protecting the floodplain forest and other lowland community types, including the acid peatlands surrounding a small bog lake in the eastern portion of the area. This area will also provide opportunities for ecological and silvicultural demonstrations related to the pine resource through both active (262 acres) and passively (80 acres) managed stands.

### Summary

- 300 acres
- One of the two best examples of natural origin mature pine forest on the property, this one being the drier of the two and containing several wetland communities and a small bog lake.
- Opportunity to develop a significant block of old-growth pine forest while using other parts of the site to practice alternative regeneration techniques for pine, as well as managed old-growth techniques

### Description of the Forest Resource

This native community management area is located within a sharp oxbow bend of the Flambeau River. Although it contains several natural communities and forest cover types, natural origin pine forest is the most notable ecological feature here. There is a core area of approximately 80 acres dominated by mature (>100 years old with some trees 24"-30" dbh) Northern Dry-mesic Forest dominated by white pine with red pine, aspen, balsam fir, northern hardwoods, and white spruce as canopy associates. The white pine has good growth potential, although there are some signs of white pine tip weevil damage in parts of the area. Saplings include white pine, red maple, and balsam fir, although white pine regeneration is sparse in most areas. Two smaller (15-20 ac.) pine-dominated stands occur to the north and south of this area. Much of the eastern half of the site is dominated by pole to small saw white birch with a strong component of large sawlog size white pine, and in some areas, dense pole-sized white pine, as well as a spruce/fir component. The white birch and aspen in this area are starting to deteriorate. Many areas of the site have a dense shrub layer of hazel.

Acid peatland communities are found here within low depressions and are dominated by 50-year-old black spruce and tamarack over a deep, continuous carpet of sphagnum mosses. These areas of Black Spruce Swamp contain several characteristic understory plants associated with peatland communities and surround Oxbo Lake, a 5 acre bog lake located in the northern half of the site. Other lowland areas along the river are dominated by alder.

### Current and Projected Cover Types

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
White Birch	43%	20%
White Pine	39%	26%
Tamarack	8%	8%
Black Spruce	6%	6%
Red Maple/Balsam	0%	36%
<b>Non-forested</b>		
Wetlands	4%	4%
<b>Total</b>	<b>100%</b>	<b>100%</b>

**Land Type Associations**

The land type association in this area is Exeland Plains. The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association.

**Soils**

The major soil map unit in this area is Pence sandy loam. This soil is somewhat excessively drained, and the depth to the restrictive layer is very deep at more than 60 inches. Another soil type in the area is the Vilas-Lindquist complex which is excessively drained. The frequently flooded but moderately well drained Moppet-Fordum complex is located along the river. There is also a small amount of Loxley and Beseman muck in the wetlands that is very poorly drained.

**Habitat Types**

The primary habitat types within this area are PARV (White pine-Red maple/Blueberries), PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla), and AVVb (Sugar maple/Blueberry-Maple-leaved viburnum).

PARV (White pine-Red maple/Blueberries) has a dry moisture regime and poor nutrient regime. This habitat type is not common on the forest and it is associated with sandy outwash soils. Red and white pine exhibit good growth potential and productivity. Timber productivity for red maple, red oak, white spruce, and balsam fir, is poor, although these species provide aesthetic and wildlife benefits. Bracken fern is typically the dominant herb, along with other dry and dry-mesic herb species. The shrub layer is usually well-developed with dense clumps common, including hazel.

PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla) has a dry to dry-mesic moisture regime and poor to medium nutrient regime. This type is particularly suited for management of pines, because growth potential for these species is high and competition pressure from understory vegetation and shade tolerant hardwoods is relatively low. White pine is sufficiently shade-tolerant to regenerate in the understory of most communities that typically develop on this habitat type. Aspen and white birch could also be considered, depending on site goals. Historically, pure and mixed stands of pine were most prevalent with white pine being well represented. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is often well-developed and dominated by beaked hazel.

AVVb (Sugar maple/Blueberry-Maple-leaved viburnum) has a dry-mesic moisture regime and a medium nutrient regime. This type was dominated by white and red pine in the pre-logging era and it is still common to see large charred stumps. Aspen, white birch, red oak and red maple appear to be well suited for this type. In the absence of disturbance, stands on this type are often gradually taken over by sugar maple, but this type is suboptimal for growth and yield of sugar maple. In some areas, white pine can be abundant in the understory where a seed source is present and conditions are favorable. Bracken fern and large-leaved aster are often the dominant herbs, and the shrub layer is typically diverse and well-developed.

**Long Term Objectives**

Allow portions of the area to develop structural, compositional and functional characteristics associated with old-growth forest, while providing opportunities to actively regenerate pine. Passively manage an Ecological Reference Site. Areas outside of the Ecological Reference Site will provide demonstration areas for using alternative techniques to regenerate white and red pine. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and potential and known rare species habitats. Protect and maintain the many wetland communities in this area such as Alder Thicket, and Black Spruce Swamp / Northern Wet Forest that are interspersed throughout the forest matrix.

**Short Term Management Objectives**

- Increase tree age throughout the area by passively managing 80 acres as an Ecological Reference site and using old forest-extended rotation techniques in some of the actively managed portions.
- Develop regeneration strategies for white pine.

- Provide for education/demonstration of silviculture trials.
- Maintain potential rare species habitats and high-quality natural communities.
- Maintain existing red and white pine, cedar, and hemlock whenever possible.
- Provide opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study.

**Management Prescriptions**

- Manage smaller patches of white/red pine located outside of the ecological reference area using techniques for regeneration harvest to achieve ecological objectives. Techniques include patch clear cuts, mechanical scarification, prescribed burning, or any combination of these treatments. Emphasis will be given to maintaining large diameter pines wherever possible.
- Passively manage 80 acres except for invasive species management, allowing the stands to develop old growth characteristics such as large trees, standing snags, and abundant coarse woody debris.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use will be permitted for invasive species management.
- Maintain a mix of deciduous and conifer forest types on appropriate sites, favoring pine but maintaining other species such as white birch for diversity. Consider underplanting white pine in portions of the white birch stand.
- Regenerate white pine through prescribed burning and/or mechanical techniques on smaller patches of white pine and compare to the passively managed ecological reference area.
- Monitor this area within the next 10 years for the presence of additional or endangered species, as resources allow.
- Wildlife openings will not be created or maintained within this management area.
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to help meet the objectives of the area.
- Monitor the ecological reference area. As this is an uncommon cover type on the forest, it provides opportunities for comparison with actively managed sites found elsewhere on the property.

**Alternatives Considered****1. Passively manage the entire site.**

This alternative was not chosen, as it was determined that completely passive management across the site would not be the most ecologically appropriate choice for these natural community types. The team instead discussed maintaining a core passively managed area, as well as smaller areas where different techniques, including those outlined in the soon to be completed pine chapter of the Wisconsin DNR old-growth handbook

## AREA 10: HANSON LAKE AND WETLANDS

### Overview

The Hanson Lake Native Community Management Area encompasses a variety of open and forested wetland communities and several small, shallow, soft water seepage lakes and ponds with widely fluctuating shoreline habitats. Seepage lakes with fluctuating shorelines are uncommon to the landscape and these, along with several of the wetland habitats, have the potential to support rare species. These wetland features are embedded within the context of a diverse forested upland, dominated by Northern Mesic Forest. This matrix of open water, wetland and forested communities makes the area valuable for the preservation of hydrological and ecological features, rare species habitat, and scenic qualities.

#### Summary

- 500 acres
- Designed to protect water quality and maintain native wetland and aquatic communities
- Opportunity to maintain an older forest of longer-lived species on the uplands, including conifer types that are becoming less common on the landscape

### Description of the Forest Resource

The forested uplands cover approximately 64% of the site and are comprised mainly of Northern Mesic Forest dominated by sugar maple, basswood, ash, and yellow birch in various size classes. Large diameter (and often over 100 years old) white pine and hemlock are found in some areas, especially near Hanson Lake. Herbaceous species in the uplands are characteristic of moderately rich sites. The forested wetlands are mostly Black Spruce Swamp, with black spruce covering about 26% of the area. Unforested wetlands include Northern Sedge Meadow, leatherleaf-dominated open bog, and smaller areas of Alder Thicket. Portions of the site, especially near the bog lake at the south end of the site, have experienced damage in recent windstorms.

### Current and Projected Cover Types

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
Northern Hardwoods	46%	46%
Black Spruce	26%	26%
Aspen	11%	11%
Fir/Spruce	5%	5%
White Pine	1%	1%
<b>Non-forested</b>		
Wetlands	10%	10%
Uplands	1%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>

### Land Type Association

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

**Soils**

The dominant soil map unit on the uplands is the well drained Antigo silt loam. Pence, Annalake, Cublake, and Sayner soils make up small scattered amounts throughout the rest of the upland areas. Muck soils comprise the remainder of the area, namely Lupton and Cathro and Loxley and Beseman.

**Habitat Types**

The primary habitat type for the uplands within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh). Habitat types have not yet been developed for forested wetlands.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

**Long Term Objectives**

Protect and maintain the hydrology, water quality and scenic value of Hanson Lake and other aquatic features. Maintain a diverse mosaic of high-quality natural communities, including potential and known rare species habitats. Maintain contiguous forest cover, connecting the diverse wetland and aquatic communities comprised mainly of longer-lived species, unless precluded by natural disturbances and site limitations. The site will have structural attributes associated with old-growth forest such as large trees, standing snags, and abundant coarse woody debris.

**Short Term Management Objectives**

- Maintain the hydrology, aesthetic values, and water quality of the lakes, ponds, and wetlands.
- Manage 243 acres for a variety of species types and age classes
- Passively manage 271 acres
- Provide opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study.
- Provide for research opportunities, ecological interpretation, and education.
- Intensive use is not encouraged, although currently established, non-motorized trails may be maintained.

**Management Prescriptions**

- Retain red and white pine, cedar, and hemlock whenever possible.
- Retain numerous standing dead snags and coarse woody habitat in both the uplands and forested wetlands.
- Manage stands isolated by wetlands only under frozen conditions.
- Old forest-extended rotation management will be used wherever possible, with special emphasis on safeguarding the area's wetland characteristics and water quality.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy including a funding source if any species are found.
- Control of invasive plants, including pesticide use may occur throughout the area, as needed.
- Monitor this area within the next 10 years for the presence of additional rare or endangered species, as resources allow.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.
- Existing wildlife openings will be naturally revegetated and no new wildlife openings will be created in this management area

- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to help meet the objectives of the area.

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## AREA 11: SWAMP LAKE AND FOREST

### Overview

Located along the east central boundary of the Forest, this area contains a completely undeveloped 258-acre soft water drainage lake with associated wetlands and mature forest. Swamp Lake itself has well-known aesthetic, wildlife, and ecological values. The lake is used during migration by various waterfowl and during the breeding season by water dependant birds like Bald Eagle, Osprey, and Common Loon. The lake's proximity to other large water bodies increases its value to these species. The area also contains several forested wetland types and an extensive block of hemlock-hardwood forest, making this one of the best opportunities on the property to develop a hemlock-dominated Northern Mesic Forest with old-growth characteristics. State Threatened birds have been documented in the forested areas and a rare plant is known from the open wetlands. The area connects to the Bass Lake and Muskeg management area to the south-east.

#### Summary

- 1,200 acres
- Designed to develop a significant block of old-growth hemlock hardwood forest while maintaining native wetland and aquatic communities
- Opportunity to manage at a landscape level, involving a mosaic of wetlands, an undeveloped lake, and forested uplands dominated by hemlock-hardwoods with old-forest attributes.

### Description of the Forest Resource

Swamp Lake itself comprises one-fifth of the area, and the majority of the remaining acreage is forested. Forested peatlands, dominated by Black Spruce Swamp with smaller amounts of tamarack and cedar dominated forest, cover approximately 33% of this site. The black spruce is pole size and smaller with an average age of 80 years old and contains characteristic peatland plant species. These stands are poorly stocked and have poor growth potential. Cedar and tamarack stands are scattered throughout the wetlands. The cedar is well stocked, mostly pole or small saw size, and close to 150 years old with poor growth potential. The tamarack is good quality, approximately 60 years old, and well stocked. More open wetland communities such as Muskeg, Open Bog and Poor Fen account for 5% of the site and harbor at least one rare plant species. Northern Hardwood Swamp, dominated by black ash and sometimes containing cedar, covers approximately 10% of the area with ponds and rivulets in some areas. The swamp hardwoods are mostly pole sized and average 100 years old.

The uplands are dominated by Northern Mesic Forest. A contiguous block of mature hemlock-dominated Northern Mesic Forest comprises approximately 20% of the area. This stand is the largest known example of this type on the property and is likely one of the larger blocks in the local landscape. Hemlock, yellow birch and sugar maple are the dominant tree species and commonly range from 20" – 30" in diameter. The remaining forested uplands are dominated by northern hardwoods, ranging from pole sized to large saw log sugar maple. These stands are located both within and adjacent to the large block of hemlock-hardwoods. Small pockets with Ephemeral Ponds are scattered in the area, and there are places with abundant tip-ups and coarse woody debris.

**Current and Projected Cover Types**

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
Hemlock	26%	23%
Northern Hardwoods	20%	23%
Black Spruce	19%	19%
Swamp Hardwoods	10%	13%
Tamarack	9%	9%
White Cedar	5%	3%
Fir/Spruce	3%	3%
White Birch	2%	2%
Aspen	1%	-
<b>Non-forested</b>		
Wetlands	5%	5%
<b>Total</b>	<b>100%</b>	<b>100%</b>

**Land Type Associations**

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

**Soils**

Over half of this native community is on Loxley and Beseman soils. These soils are very poorly drained mucks, with a restrictive feature at over 60". The uplands around Swamp Lake are on Sconsin silt loam; with smaller areas of Antigo silt loam and Padus silt loam, which are well drained soils. Two moderately well drained complexes occur in small amounts in this area also. The complexes are the Freeon, very stony-Sconsin complex and the Freeon, very stony-Freeon complex. The depth to the restrictive feature for the Sconsin soil is 20-38" making this soil type prone to wind damage. The depth to the restrictive feature for the other soils ranges from 40" to over 60".

**Habitat Types**

The muck soils do not have habitat types associated with them at this time. The primary habitat type on the uplands within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

**Long Term Objectives**

Protect and maintain the water quality, shorelines, hydrology and scenic qualities of Swamp Lake and its associated wetlands. Maintain forest structural diversity, increasing the dominance of longer-lived trees and developing old-growth characteristics such as the presence of large diameter trees, coarse woody debris, and standing dead snags. Provide opportunities for research, education, and interpretation of these high-quality natural communities.

### Short Term Management Objectives

- Passively manage the Ecological Reference Site comprising the large stand of hemlock-hardwood forest east of Swamp Lake.
- Manage the uplands outside of the ecological reference site using old forest - extended rotation techniques to develop old-growth attributes. Place emphasis on retention of large trees, coarse woody debris and standing dead snags. Encourage hemlock, yellow birch and white pine where possible.
- Monitor hemlock stands for growth and regeneration levels.
- Provide limited, low-impact public access
- Maintained a mosaic of high-quality wetland communities and forested uplands surrounding an undeveloped lake.

### Management Prescriptions

- Passively manage all wetlands within the site. Perform no active timber management within forested wetlands, except to clear roads and trails.
- Passively manage the Ecological Reference Site, except to clear trails or roads and control invasive species.
- Protect natural white pine, red pine, cedar, and hemlock regeneration.
- Encourage development of conifer tree species in upland forest outside of the Ecological Reference Site where advantageous and consistent with area objectives.
- Hemlock regeneration trials will be done outside of the Ecological Reference Site to the south (e.g., stands 12 and 17 Compartment 101).
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use will be permitted for invasive species management.
- Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
- New recreational features will not be developed on this site.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.
- Wildlife openings will not be created or maintained within this management area.
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to help meet the objectives of the area.

### Alternatives Considered

1. Actively manage the large block of hemlock and attempt hemlock regeneration trials here.

This alternative was not chosen. Since this is largest contiguous block of mature hemlock on the property, the team decided that regeneration trials would best be done elsewhere. If an effective hemlock regeneration technique is ever developed for the FRSF, this discussion could be reevaluated in a future planning cycle.

2. Include the wetlands south of the ATV trail in the area boundary.

This alternative was not chosen, as these wetlands would be bisected from the rest of the management area by an existing ATV trail, and the team decided that the prescriptions for the forest production area surrounding these wetlands could adequately assure their protection. The main ecological features for which this site was identified (i.e., Swamp Lake and adjacent wetlands, as well as the large block of hemlock-dominated Northern Mesic Forest) have been included in the preferred alternative.



## AREA 12: BASS LAKE AND MUSKEG

### Overview

This site features a complex of high quality peatlands, forested uplands, and an undeveloped lake. Bass Lake itself is a 94-acre deep, soft water seepage lake with a completely undeveloped shoreline that has long been recognized for its ecological and aesthetic qualities. Extensive wetlands connecting to the lake and extending south for several miles contain excellent examples of several native peatland community types including Muskeg, Open Bog and Poor Fen. At least two rare plants inhabit the wetlands. Second-growth stands of hemlock and white pine, along with richer stands of Northern Mesic Forest dominate the uplands. This area connects to the Swamp Lake Native Community Management Area to the northwest, furthering its value as a landscape-level management opportunity.

### Summary

- This area is approximately 2,100 acres
- Protects an excellent example of an undeveloped lake connected to a large expanse of acid wetlands and a block of Northern Mesic Forest
- Opportunity to protect hydrology, develop old-growth characteristics in both the uplands and wetlands, and continue to provide rare species habitat

### Description of the Forest Resource

Forested wetlands cover approximately 78% of this area and are dominated by Black Spruce Swamp and Muskeg. Sapling to pole sized black spruce and tamarack that average 90-100 years old dominate these areas. Growth potential for both species is poor in this area. The remaining wetlands are a combination of Open Bog, Poor Fen, and more open Muskeg containing stunted black spruce and tamarack with a sedge-dominated herb layer and sphagnum groundlayer. These forested and open peatland communities form a complex extending for three miles from Pot Lake south to CTH W. Two additional wetland blocks are located on the south side of CTH W. The wetland itself extends outside of the both the native community management area and the property boundary.

Uplands comprise approximately 17% of the area and are primarily small, moderately rich stands of Northern Mesic Forest. Mature, second-growth stands of hemlock and white pine occur adjacent to Bass Lake. Richer stands of Northern Mesic Forest dominated by sugar maple, basswood and white ash are located further from the shore. A small portion of the uplands consists of 100-year-old pole sized red maple with a balsam fir understory and poor growth potential.

### Current and Projected Cover Types

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
Black Spruce	54%	54%
Tamarack	24%	24%
Northern Hardwoods	16%	16%
Hemlock	1%	1%
<b>Non-forested</b>		
Wetlands	5%	5%
<b>Total</b>	<b>100%</b>	<b>100%</b>

### Land Type Associations

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

**Soils**

The majority of this native community is on Loxley and Beseman soils. These soils are very poorly drained mucks. There is also a small amount of Lupton and Cathro mucks in this area. The depth to a restrictive feature for these mucks is very deep at over 60". The uplands around Bass Lake are on Sconsin silt loam or Antigo silt loam. These soils are well drained. The depth to the restrictive feature for the Sconsin soil is 20-38" making this soil type prone to wind damage. The depth to the restrictive feature for the Antigo soil is very deep at over 60".

**Habitat Types**

The muck soils do not have habitat types associated with them at this time. The primary habitat type on the uplands within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

**Long Term Objectives**

Preserve the remote and scenic nature of Bass Lake by maintaining an undeveloped shoreline. Protect the water quality, hydrology and aesthetic qualities of Bass Lake and its associated wetlands. Maintain both the uplands and wetlands as Ecological Reference Sites, allowing old-growth characteristics to develop. Maintain high-quality examples of native communities such as Northern Mesic Forest, Black Spruce Swamp, Muskeg, Open Bog and Poor Fen.

**Short Term Management Objectives**

- Protect and maintain rare species habitats and high quality natural communities.
- Passively manage this area, allowing natural development of old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags.
- Provide opportunities for low-impact uses such as hiking, fishing, bird-watching, photography, and nature study.
- Provide for opportunities for research, ecological interpretation, and education.
- Intensive use is not encouraged, although currently established, non-motorized trails may be maintained.

**Management Prescriptions**

- Passively manage this area, except to clear existing trails and control invasive species.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy if any species are found.
- Pesticide use will be permitted for invasive species management.
- Monitor this area within the next 10 years for the presence of additional rare or endangered species, as resources allow.
- Intensive use will not be permitted, except for the existing and future snowmobile trail, established trails, and future logging trails for approved salvage sales.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting guidelines, will not occur in this area.
- Wildlife openings will not be created or maintained within this management area
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to help meet the objectives of the area.

**Alternatives Considered**

1. Combine the Bass Lake and Swamp Lake management areas into one large Native Community Management Area.

Due to some differences in the preferred objectives and prescriptions for the two sites, the team decided to keep the sites separate.

2. Include the entire muskeg in the area boundary. This would have included some areas outside of the current project boundary.

The team decided not to include portions of the wetland outside of the current project boundary but agreed that the entire wetland should be acknowledged for its ecological importance in future boundary expansion discussions.

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## AREA 13: HACKETT CREEK WATERSHED

### Overview

Located in one of the more remote and roadless locations of the FRSF, this area has a number of ecologically significant qualities. Consisting largely of wetland community types, this area includes the headwaters of the Hackett creek and its entire watershed. Hackett Creek itself is a Class A coldwater stream and is classified by the Wisconsin DNR Water Quality Standards Program as an “Exceptional Resource Water.” The wetlands include areas with a significant cedar component, an uncommon forest type on the FRSF with the potential to support rare species. A small bog lake and associated forest harbors at least one species of rare plant. As this area is designed to protect hydrology and maintain high-quality wetland communities, it will be important to minimize impact to the adjoining uplands.

#### Summary

- 1, 300 acres
- Includes the entire watershed of a high-quality stream, including several wetland types
- Designed to protect water quality and maintain native wetland and aquatic communities, as well as rare species habitat

### Description of the Forest Resource

Wetlands comprise the majority of this area in both forested and non-forested natural community types. Northern Hardwood Swamp makes up almost one-quarter of the area, with mostly sapling to pole-sized trees in stands ranging from 30 to 110 years old, often lacking regeneration. Other forested wetlands cover 31% of this area, including roughly equal proportions of Black Spruce Swamp, Tamarack (poor) Swamp, Northern Wet-mesic Forest (cedar swamp), and other wet forests dominated by balsam fir. The Black Spruce Swamps are dominated by pole-sized trees that range from 64-130 years old; notable examples of the type include a fairly extensive “arm” on the western portion of the site that was surveyed as part of the DNR “Peatlands Project” and another portion surrounding a small bog lake in an area known to harbor an endangered plant. The tamarack is pole and small saw size, ranging between 63-122 years old with swamp hardwoods as a common secondary cover type. The Northern Wet-mesic Forest is dominated by cedar in various size classes, often with a contiguous layer of Sphagnum and interspersed with tamarack and ash. In some places large diameter (e.g., 18”) cedars are present that average close to 140 years old. Areas dominated by balsam fir are primarily under 5” diameter and between 30-65 years old. Approximately one-third of this area is covered by unforested wetlands, including Alder Swamp and bluejoint-dominated Northern Sedge Meadow, primarily located along Hackett Creek and associated tributaries.

Uplands comprise only 18% of the management area, the majority forested in aspen, hemlock, northern hardwoods, and white spruce. Thirty-one year old aspen stands are located in small patches near the center of the site. Hemlock is concentrated in only a couple of small patches where trees are 5-15” in diameter and over 120 years in age. Mature, super-canopy white pine occurs in some areas. Northern Mesic Forest covers approximately two-percent of the area, mostly in one small patch near the center of the site, dominated by mature sugar maple, basswood, and occasional hemlock and yellow birch. There are pockets with groundlayer plants associated with richer habitats, but ground cover is sparse many areas.

**Current and Projected Cover Types**

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
Swamp Hardwoods	18%	12%
Black Spruce	16%	16%
Tamarack	10%	11%
Northern Hardwoods	7%	8%
White Cedar	5%	4%
Hemlock	5%	4%
Fir/Spruce	3%	2%
<b>Non-forested</b>		
Wetlands	33%	36%
Uplands	3%	7%
<b>Total</b>	<b>100%</b>	<b>100%</b>

**Land Type Associations**

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

**Soils**

The majority of the soils in this management area are either hydric or poorly drained. Moderately well drained to excessively drained soils make up only 14% of the area. Over half of the soils in this area are the Lupton and Cathro soil map units. This soil is a very deep, poorly drained muck with over 51" of herbaceous and woody organic material that can be found in depressions on moraines, outwash plains, and lake plains. Minocqua muck makes up the next most extensive (13%) map unit in this area. It is found in depressions and drainage ways on outwash plains and stream terraces. The Bowstring muck runs along Hackett Creek in the southern half of this area. This poorly drained muck can be found in overflow channels and depressions on flood plains. There is a small amount of the Moppet-Fordum complex located where Hackett Creek flows into the Flambeau River. This complex is occasionally to frequently flooded but moderately well drained. The soil map units comprising the majority of the uplands are Pence sandy loam and Manitowish sandy loam, which are somewhat excessively drained and moderately well drained, respectively

**Habitat Types**

Habitat types have not been developed for the forested lowland types comprising most of this management area. The habitat types on the uplands are ATM (Sugar maple-Eastern hemlock/Wild-lily-of-the-valley), PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla), and AVVb (Sugar maple/Blueberry-Maple-leaved viburnum).

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla) has a dry to dry-mesic moisture regime and poor to medium nutrient regime. This type is particularly suited for management of pines, because growth potential for these species is high and competition pressure from understory vegetation and shade tolerant hardwoods is relatively low. White pine is suffi-

ciently shade-tolerant to regenerate in the understory of most communities that typically develop on this habitat type. Aspen and white birch could also be considered, depending on site goals. Historically, pure and mixed stands of pine were most prevalent with white pine being well represented. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is often well-developed and dominated by beaked hazel.

AVVb (Sugar maple/Blueberry-Maple-leaved viburnum) has a dry-mesic moisture regime and a medium nutrient regime. This type was dominated by white and red pine in the pre-logging era and it is still common to see large charred stumps. Aspen, white birch, red oak and red maple appear to be well suited for this type. In the absence of disturbance, stands on this type are often gradually taken over by sugar maple, but this type is suboptimal for growth and yield of sugar maple. In some areas, white pine can be abundant in the understory where a seed source is present and conditions are favorable. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is typically diverse and well-developed.

### **Long Term Objectives**

Maintain a high quality complex of native wetland communities including areas that support older white cedar, black spruce, tamarack and swamp hardwoods. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and potential and known rare species habitats. Limit development in area and along water bodies to existing roads. Maintain the uplands in longer-lived species, unless precluded by natural disturbances and limitations. Hydrologic function is critical in regulating these communities, so hydrology should be protected or restored where possible. Provide opportunities for research, education and ecological interpretation and low-impact uses such as hiking, bird-watching, photography, and nature study

### **Short Term Management Objectives**

- Increase age structure through old forest-extended rotation management in the forested uplands (90 acres), favoring longer-lived species.
- Maintain potential and known rare species habitats and high-quality natural communities.
- Maintain limited low impact public access and provide opportunities for education and interpretation of these natural communities and habitats.
- Provide opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study.
- Provide opportunities for research, education, and ecological interpretation.

### **Management Prescriptions**

- Actively manage 90 acres of the upland forests using old forest-extended rotation. Attempt to convert aspen stands to longer-lived species. Passively manage all other areas.
- Protect natural white pine, cedar, and hemlock regeneration.
- Encourage development of conifer tree species where advantageous and consistent with area objectives.
- Use Best Management Practices for Water Quality and other sustainable forest management practices to limit soil damage, erosion, sedimentation, and hydrologic changes.
- Protect significant areas from hydrological changes from road construction and development.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use will be permitted for invasive species management.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.

- Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
- Wildlife openings will not be created or maintained within this management area
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to meet the objectives of the area.

**Alternatives Considered**

1. Maintain the 795 acres identified in the Biotic Inventory (2008).

This alternative was not chosen because further discussions and map reviews indicated an opportunity to protect the entire Hackett Creek watershed and associated wetlands. While the Biotic Inventory (2008) delineated a site with unique ecological features, the current boundary provides greater ecological and wildlife benefits.

## AREA 14: FLAMBEAU FORKS INTERIOR FOREST

### Overview

This area features a large block of rich, mature maple-basswood dominated Northern Mesic Forest, with partially impeded drainage in some areas. These “wet phase” habitat types are a highly productive and ecologically-important community variant, supporting a mixture of swamp hardwood species in addition to some mesic hardwoods. The southern portion of the site near Skinner Creek exhibits the richest spring flora known from the FRSF, with many species at or near their northern range limits, and is probably one of the richest sites on any of Wisconsin’s state forests. Aquatic features such as Ephemeral Ponds are located in several places. Louisiana Waterthrush, a rare forest interior songbird, occurs here at the extreme northern limits of its breeding range, and there is potential for other rare species. This area includes a portion devoted to ongoing research examining the effectiveness of various structural manipulations on accelerating the development of certain old-growth characteristics. Forest Management strategies include: active (770 acres of extended rotation), passive (265 acres), and a core research area (325 acres), to meet the objectives in this area.

### Summary

- 1,300 acres
- Unique opportunity to maintain an area of older high-quality Northern Mesic Forest utilizing three distinct management approaches: research using active manipulation techniques, passive management for old-growth development, and extended rotation timber management emphasizing sustainable production of high-quality sawlogs
- Opportunity to develop features associated with old-growth, such as large, old trees, grown to biological maturity and beyond while protecting a diverse ground flora and unique aquatic and wetland features, including rare species habitat

### Description of the Forest Resource

A rich Northern Mesic Forest dominates the area, comprised mainly of sugar maple, basswood, and yellow birch, with smaller densities of other species including scattered white pine and hemlock. Large diameter (20”) trees are found in some areas, and many locations contain a diverse ground flora with abundant spring ephemerals; these are mostly limited to smaller, discontinuous patches in other areas of the FRSF. Perched wet pockets occurring in shallow depressions sometimes contain hemlock or mixed swamp hardwoods. Small, intermittent drainages, including Forested Seeps, are found in some locations, as well as Ephemeral Ponds. Unusual trees occurring in this portion of the property include bitternut hickory and butternut.

The timber resource here includes the highest quality northern hardwoods on the forest, primarily in large and small saw log sizes with hardwood poles as a secondary type and offers the best opportunity on the property for growing high-quality sawlogs. The basal area of these stands ranges from 58-134 sq. ft./ac., and averages 96 sq. ft./ac. Cedar and swamp hardwoods make up the next largest cover type. The cedar, although over 120 years old, has poor growth potential and is small saw and pole size with low stocking levels and an alder understory. The swamp hardwoods portions of the area average 100 years old in small saw and pole size with poor growth potential. The remaining cover types occur in smaller amounts, including good quality aspen saplings and poles covering 2% of this area, a white spruce plantation covering 1% of the area, and poor quality 100-year-old tamarack covering another 1% of the area. A 50-year-old pine plantation and unforested grassy areas comprise the remaining 2% of the management area.

**Current and Projected Cover Types**

Cover Type	Current	Projected (50 years)
<b>Forested</b>		
Northern Hardwoods	81%	81%
White Cedar	5%	4%
Swamp Hardwoods	5%	5%
Hemlock	3%	3%
Aspen	2%	2%
Fir/Spruce	1%	1%
Tamarack	1%	1%
Red Pine	1%	1%
<b>Non-forested</b>		
Uplands	1%	1%
Wetlands	-	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>

**Land Type Association**

The Jump River Ground Moraine (212 Xd05) comprises the majority of this area. The characteristic landform pattern of the Jump River Ground Moraine is undulating moraine and stream terraces. Soils are predominantly somewhat well drained silt loam over dense, acid sandy loam till. This land type association is only found along portions of the southern edge of the forest, and this is the only Native Community Management Area within this land type association. Exeland Plains (212Xd03), the landtype comprising the bulk of the FRSF, covers only a small portion of this area. The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash.

**Soils**

The soils are diverse in this area with 21 different map units represented. The research and core passive areas are comprised mainly of the Magnor-Freeon complex, a somewhat poorly drained soil with a depth to a restrictive layer of 40-60." The extended rotation areas are largely the Freeon, very stony-Freeon complex with several other types making up smaller areas. The Freeon complex also has a depth to a restrictive layer of 40-60", but this complex is moderately well drained. The soils present on steep ridges along the Flambeau River and Skinner Creek include Newot-Pence complex, Pelissier gravelly sandy loam, and Pence sandy loam. These soils range from well drained to excessively drained. The depth to a restrictive layer is very deep for these soils. The remaining area is in somewhat poorly drained to very poorly drained soils which include Lupton and Cathro muck, Magnor, very stony-Magnor complex, and the Capitola-Cebana complex.

**Habitat Types**

The primary habitat types within this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moder-

ately well developed in younger or early successional stands, but poorly represented in older stands.

**Long Term Objectives**

Maintain a contiguous block of mature and old-growth Northern Mesic Forest within a matrix of Ephemeral Ponds, Forested Seeps, and riparian corridors. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and rare species habitats. Provide opportunities for scientific research, including comparisons of different management strategies on the development of old-growth characteristics. This area is expected to remain a rich maple-basswood forest as site and stand conditions allow within the research, passive, and extended rotation units of the management area. Red and white pine, cedar, and hemlock will be maintained in the extended rotation area, wherever possible.

**Short Term Management Objectives**

- Maintain three distinct management units within the area
- Use old forest-extended rotation techniques on approximately 770 acres to increase the age structure and maintain a diverse species composition, where possible. Management will strive to convert existing even-aged northern hardwood forests in Area A to uneven-aged and encourage long-lived species.
- Maintain approximately 265 acres as a passively managed ecological reference area with the eventual goal of developing an old-growth hardwood forest.
- Maintain limited low-impact public access
- Provide research opportunities consistent with area management objectives
- Provide for education/demonstration of old forest and extended rotation management.
- Provide opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study.

**Management Prescriptions**

- Use old forest-Extended Rotation Management to manage 770 acres. While timber production is an objective, increased emphasis should be on aesthetics, wildlife habitat, and biodiversity. Appropriate stocking guides may utilize a 24-plus to 30-plus inch maximum tree size class. Longer cutting cycles generally would be appropriate. Additional ecological forestry techniques should be applied, such as the retention of reserve trees, management of coarse woody debris (abundant large snags and downed rotting logs), and the encouragement of coniferous associates (especially white pine and hemlock). Retain cover for Ephemeral Ponds and avoid negatively impacting their hydrology. Maintain standards of red and white pine, cedar, and hemlock.
- Passively manage 265 acres
- Continue ongoing research on 325 acres studying the effects of various treatments on accelerating the development of old-growth structure and composition over a fifty year period.
- Monitor this area within the next 10 years for the presence of additional rare or endangered species, as resources allow.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy including a funding source if any species are found.
- Pesticide use will be permitted for invasive species management.
- Follow BMP standards for water quality to protect aquatic features during all management activities
- Intensive use will not be permitted, except for the existing gravel pit, established trails, and future recreation/logging trails.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.

- Wildlife openings will not be created or maintained within this management area
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to meet the objectives of the area.

**Alternatives Considered**

1. Manage the area as only two, rather than three, separate zones focusing on 1) research and 2) extended rotation for high quality sawlogs.

This alternative was not chosen, as this area is the premier site on the property for developing old-growth characteristics. The area has numerous characteristics not found on the remainder of the property and offers a unique opportunity to utilize three distinct management approaches: research using active manipulation techniques, passive management for old-growth development, and extended rotation timber management emphasizing sustainable production of high-quality sawlogs. The team agreed that a sizeable core of passively managed area was preferred here and felt that this could be done while still providing ample opportunities to address research and timber management priorities.

## AREA 15: LAKE OF THE PINES CONIFER HARDWOODS

### Overview

This area was recognized several decades ago for its ecological importance and was recommended for special designation by famous Wisconsin ecologist John T. Curtis, eventually becoming a State Natural Area (SNA) in 1955. This site is one of two existing SNAs on the property that originally featured relict old-growth forests. Located along the east shore of Lake of the Pines, this 200-acre area was once dominated by mature hemlock, yellow birch, and white pine with blocks of mixed hardwoods further from the lakes and a few scattered forested wetlands. Both SNAs sustained significant tree damage in the 1977 windstorm, and much of the old-growth timber was toppled. Salvage operations occurred in portions of the area following the windstorm, but a core area occupying a good portion of the peninsula was left unsalvaged. The area now contains some portions with mature trees and has value for long-term monitoring, as well as its connection to the lake and potential rare species habitats. Rare birds have been reported here during nesting season in the last decade.

### Summary

- 200 acres
- Site has a long history, offering the opportunity to research recovery of an old-growth forest following a windstorm
- Opportunity to develop features associated with old-growth, such as large, old trees, grown to biological maturity and beyond while protecting wetland features and rare species habitat

### Description of the Forest Resource

Forest species composition and structure vary throughout the area as a result of various influencing factors, most notably the 1977 windstorm and subsequent salvage operations. Numerous downed trees contribute to the wild character of some parts of the area. Following the storm, some of the more open patches came back to aspen, others to northern hardwoods, and others contained higher proportions of low shrubs and herbaceous cover. The peninsula and adjacent areas are comprised of Northern Mesic Forest including portions dominated by 11"-15" diameter sugar maple and basswood with a relatively intact canopy and dense maple saplings. Red oak and white ash are mixed throughout. Other portions contain mature (15" and up) hemlock, yellow birch, and cedar with numerous gaps. These areas contain tip-up mounds seeded with pole-sized yellow and white birch, as well as some black cherry. These stands grade into high quality tamarack, and black ash swamp to the southwest. As with many areas of the forest, deer browse is quite heavy here.

### Current Land Cover and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	67%	67%
Aspen	14%	14%
Hemlock	6%	6%
Cedar	5%	5%
Swamp Hardwoods	4%	4%
White Birch	3%	3%
<b>Unforested</b>		
Wetlands	1%	1%
<b>Total</b>	100%	100%

**Land Type Associations**

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

**Soils**

Over 80% of the area is covered by three soil map units. Sconsin silt loam is the most prevalent cover type (50% of the area), covering much of the peninsula and other upland areas. Pence sandy loam and Antigo silt loam cover another 17% and 14% of the area respectively. Soils associated with wetlands, primarily mucks, comprise another 16% of the area.

**Habitat Types**

There are two primary habitat types within this area: AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

**Long Term Objectives**

Develop and maintain a contiguous block of Northern Mesic Forest with old-growth characteristics in some areas. Maintain and protect the integrity of the forested wetland features and their hydrological connections to the lake. Provide opportunities to conduct research examining the recovery of old-growth following catastrophic windstorm events. Use this site as an ecological reference area, providing opportunities for research, education and interpretation.

**Short Term Management Objectives**

- Develop old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags
- Provide opportunities for research, ecological interpretation, and education
- Provide opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study
- Maintain the remote nature of this site

**Management Prescriptions**

**Note:** The master planning team plans to evaluate the boundaries of the existing SNA to determine the best course of action for the areas that were salvaged following the 1977 windstorm. This site has a long history of ecological importance and a careful evaluation is warranted. The team has generally agreed that it would be preferred to maintain much of the peninsula and the wetlands in a passively-managed state but has not yet decided what the boundaries should be for this “core area” or what the most appropriate level of management would be for the immediately surrounding areas. Preliminary prescriptions are listed below, and additional prescriptions will be developed prior to the draft plan:

- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy if any species are found.

- Pesticide use will be permitted for invasive species management.
- Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
- New recreational features will not be developed on this site
- New roads or trails will not be developed on this site
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.
- Wildlife openings will not be created or maintained within this management area

## AREA 16: FLAMBEAU RIVER HARDWOOD FOREST

### Overview

This area represents a portion of the former “Big Block,” an 1800-acre section of the forest once occupied by old growth hemlock-hardwoods and the largest state-owned relict old-growth stand in Wisconsin. This portion of the Big Block was designated a State Natural Area in 1952. On July 4, 1977, much of the area was blown down by a down burst wind event; this management area comprises the only sizeable wind-damaged yet non-salvaged portions and the only remaining old-growth portions of the original State Natural Area following the storm. The area has a long history of ecological study, both before and following the 1977 storm, and provides a unique opportunity to examine the recovery of a Lake States old-growth forest following catastrophic wind disturbance. Portions of the existing State Natural Area that were formerly logged will be incorporated into Area 6 with special considerations given to existing long-term research plots.

### Summary

- 300 acres
- Former location of a landmark tract of old-growth hemlock-hardwoods.
- Site has a long history, including previous and ongoing research efforts and offers a unique opportunity to examine recovery of an old-growth forest following a windstorm, with and without salvage logging

### Description of the Forest Resource

Much of this area is comprised of forest originating from the 1977 windstorm. Northern hardwoods are the prevalent cover type, although overstory species here are diverse. In addition to maples and aspen, there are areas with red oak, basswood, yellow birch, maple, ash, cherry and elm. Dominant saplings include sugar maple, basswood, yellow birch, American elm, white ash, red maple, and black cherry. A recent study (Dr. Lisa Schulte, pers. communication) suggests that this area has higher/deeper pit and mound topography than areas where salvage occurred. A cedar stand is located along the western edge of the area near the river. Relict mature forest, including large diameter white pine, occurs in patches, particularly near the river. Hemlock does not appear to be successfully reproducing here, similar to the rest of the property.

### Current and Projected Cover Types

Cover Type	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	84%	84%
Swamp Hardwoods	5%	5%
Cedar	4%	4%
White Pine	1%	1%
Aspen	1%	1%
<b>Non-forested</b>		
Wetlands	4%	4%
Upland	1%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>

**Land Type Associations**

The characteristic landform pattern of the Exeland Plains (212Xd03) is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association.

**Soils**

The soils of this area are sandy loams (57%), silt loams (31%), loamy sands (9%), and a small amount (3%) of peat/muck soils. Almost one-third of the area is comprised by Sconsin silt loam, a “windthrow-prone” soil that comprises much of the former “Big Block” (see Area 6). The most prevalent soil type is Pence sandy loam, a soil derived from mostly loamy alluvium underlain by stratified sandy and gravelly outwash and with greater than 80” depth to a restrictive layer.

**Habitat types**

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

**Long Term Objectives**

Provide unique opportunities to conduct natural area research, education, and interpretation. Allow forest to naturally age and gradually develop characteristics associated with older forest including large trees, abundant coarse woody debris and standing dead snags

**Short Term Management Objectives**

- Passively manage this site to continue to provide opportunities for research, education, and interpretation.
- Provide opportunities for low-impact uses such as hiking, bird-watching, photography, and nature study
- Maintain the remote nature of this site

**Management Prescriptions**

- Passively manage this area, except to clear trails or roads and control invasive species. Timber salvage generally should not occur unless necessary to meet statutory responsibilities.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use will be permitted for invasive species management.
- New recreational features will not be developed on this site
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.
- Wildlife openings will not be created or maintained within this management area

**Alternatives Considered**

## 1. Use the boundary from the existing natural area

This alternative was not chosen, as it was agreed that the areas that were salvaged following the 1977 windstorm would be best managed as part of the Big Block Forest Production Area (Area 6). However, existing research plots for examining the differences between salvaged and unsalvaged areas will be given special consideration to allow for long-term study (see Area 6 prescriptions).

Although this management area excludes approximately 120 acres of the salvaged portion of the existing SNA boundary, 27 acres that are not part of the existing SNA were added to the western edge to provide a connection to the river and incorporate some additional mature pine and cedar remnants.

HABITAT MANAGEMENT AREAS

The management objective of habitat management areas is to provide or enhance habitat (upland, wetland, or aquatic) to support specific species of plants or animals. Habitats and communities with this designation are managed for a wide variety of purposes, including focused species production and protection.

Habitat Management Area	
Area Name	Acres
Area 17: Ruffed Grouse Habitat	4,000
Total	4,000

## AREA 17: RUFFED GROUSE HABITAT

### Overview

Located in the southeast corner of the forest, this area is 4,000 acres and includes Sobieski Flowage. Part of this area is in a different land type association than the rest of the forest. This area provides substantial amounts of aspen for wild-life including ruffed grouse, American woodcock, beaver, deer, and many other species. It supports a variety of age classes of aspen in conjunction with other northern forest types to provide for a diverse wildlife community. Sobieski flowage provides an opportunity for the management of furbearers, other wetland wildlife and waterfowl. Some fishing activity also occurs at this flowage.

### Summary

- 4,000 acres
- Provide habitat for ruffed grouse and other wildlife
- Provide a diversity of cover types

### Description of the Forest Resource

Over one-third of this area is aspen in a variety of age classes, ranging from 3 -72 years, with an average age of 45 years and with good growth potential. Red maple and balsam fir are the most common secondary types within the aspen type. Forested and unforested wetlands make up 28% of the area; forested wetlands consist of 70% of poor quality black spruce, 25% of average quality tamarack, and a small amount of balsam fir. The black spruce is approximately 70 years old, while the tamarack ranges from 30-89 years. The unforested wetlands are almost entirely lowland brush – alder. Northern hardwoods cover 22% of the area. Stand size ranges from 2 acres -191 acres. The stands are primarily small sawlog size with a few stands of large sawlog size. Overall, the quality of northern hardwoods is poor to average here. Swamp hardwoods and red maple cover 13% of the area. Site indexes support average growth potential for black ash and average to good growth potential for red maple. The average age of the swamp hardwoods is about 83 years, with red maple ranging in age from 46-93 years old. The swamp hardwood and red maple types propose potential problems with regeneration. Scarification may be needed on these sites for regeneration. Red and white pine and white spruce make up about 2% of the area. The red pine is a 52 year old plantation with good growth potential. The white pine is approximately 67 years old and also has good growth potential. Small sawlog sized aspen make up the secondary type of the white pine. The 41 year old spruce plantation also has good growth potential and is primarily small sawlog size.

### Current and Predicted Cover Types

Predicted Cover Type	Current	Projected 50 years
<b>Forested</b>		
Aspen	33%	35%
Northern Hardwoods	22%	22%
Swamp Hardwoods	9%	7%
Forested Wetlands	10%	10%
Red Maple	4%	4%
Red and White Pine	1%	1%
White Spruce	1%	1%
<b>Non-forested</b>		
Wetlands	18%	18%
Uplands	2%	2%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested wetlands include tag alder and kegs. Non-forested uplands include upland brush and grasses.		

**Land Type Associations**

The land type associations in this area are Exeland Plains (212Xd03) and the Jump River Ground Moraine (212Xd05). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. The characteristic landform pattern of Jump River Ground Moraine is undulating moraine and stream terraces. Soils are predominantly somewhat well drained silt loam over dense, acid sandy loam till. This land type association is only found along portions of the southern edge of the forest.

**Soils**

Over half of this area is classified as muck. The muck is made up of sphagnum moss, herbaceous organic material or woody organic material. The Capitola-Cebana complex also contains a 0-5 inch layer of muck over silt loam and sandy loam. Magnor, very stony-Magnor complex covers about one-third of the area. This soil is somewhat poorly drained. The upland sites consist of the Freeon, very stony-Freeon complex and the Freeon, very stony – Sconsin complex. These complexes are moderately well drained.

**Habitat Types**

Currently, mucks do not have habitat types assigned to them. The primary habitat types within this area are ArAbCo (Red maple-Balsam fir/Bunchberry) and AOCa (Sugar maple/Sweet cicely-Blue cohosh).

ArAbCo (Red maple-Balsam fir/Bunchberry) is strongly associated with silt loams that are subject to a high water table, therefore there is a high chance for “swamping” or flooding. This type is best suited for balsam fir, white spruce, aspen, and red maple. Habitat diversity could be improved by increasing the conifer component on this type. Windthrow is the primary disturbance factor on this type mainly due to rooting not being firm on the somewhat poorly drained soils. The herb layer is moderately well developed and relatively species poor.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

**Long Term Objectives**

Management of this area will focus on improving the capacity to support ruffed grouse habitat. The current aspen acreage will remain the dominant cover type within a mixed forest in a variety of age classes and patch sizes. Other associated species would be managed along with the aspen, to the extent that they do not interfere with adequate aspen regeneration. Current levels of red pine and spruce plantation acreage will be maintained. Sobieski Flowage will be maintained for water quality, riparian habitat, and scenic qualities.

**Short Term Management Objectives**

- Increase aspen and encourage age class diversity through smaller cuts.
- Maintain current acreages of all other forest cover types. The age structure of the cover types, especially aspen, will change over time.
- Maintain current levels of natural and artificial grass openings for wildlife.
- Maintain current levels of recreational walking trail.
- Convert Scotch pine to native pine species.

- Manage for ruffed grouse, furbearers and waterfowl.
- Improve waterfowl habitat on Sobieski Flowage, including wood duck nesting habitat associated with scattered ponds.
- Promote reintroduction of wild rice.

**Management Prescriptions**

Please see the General Management Prescriptions at the beginning of this section for general management by forest type. The General Management Prescriptions apply and all management activities are authorized, except as noted below for this management area.

- Even-aged management may be considered on northern hardwood sites where crop trees are lacking to achieve long-term uneven aged stand management. Even-aged management includes overstory removal and shelterwood cuts.
- Mechanical site preparation will be done as needed. Mowing, scarification, herbicide or other methods may be utilized for regeneration.
- Use coppice techniques to regenerate aspen in mixed stands as necessary to ensure regeneration after salvage operations.
- Monitor Sobieski flowage for maintenance needs and regulating flowage depths to benefit waterfowl feeding periods.
- Broadcast wild rice seed in cooperation with GLFWC.

**Alternatives Considered**

1. Less emphasis on early successional species, particularly aspen. This alternative was not chosen because the primary objective of this area is to provide habitat for wildlife, especially ruffed grouse, which prefer early successional habitat.
2. Reduce the acreage of non-forested uplands by planting. This was not chosen because of the benefits of unforested openings to wildlife species.

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## SCENIC MANAGEMENT AREAS

The scenic resources management classification is applied to lands with outstanding scenic attractions, scenic lakes, rivers and streams with high value for water-based recreation. This classification may be applied to scenic highways, roads, trails or vistas for the specific use of enjoying the scenery (WDNR 2001).

Scenic Management Area	
Area Name	Acres
Area 18: Flambeau River Scenic Area	17,000
<b>Total</b>	<b>17,000</b>

The management objective of a scenic resources management area is to protect, maintain, and enhance for long-term public enjoyment lands or waters having unique aesthetic qualities or outstanding scenic beauty. Development within the scenic resource management areas will be located and designed to be harmonious with the surrounding landscape and have minimal negative impact upon its scenic values (WDNR 2001). Vegetation management approaches appropriate for use within scenic resource management areas may vary from passive management to active management, depending upon the long-term scenic management objective and the site's ecological capability, vegetation types, and site conditions.

Examples of potential vegetation management activities that may be prescribed by the master plan include timber harvesting, planting, herbicide application, mowing, burning, flooding, installation of fish habitat improvement devices, road construction, and erosion control. Additional restoration activities potentially include cutting trees and shrubs to maintain or create scenic vistas, underplanting or replanting (preferably native trees and shrubs) for visual variety or to speed conversion to a scenically desirable forest type and removal of invasive species.

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## AREA 18: FLAMBEAU RIVER SCENIC AREA

### Overview and Summary

This area is comprised of approximately 17,000 acres on both sides of the North and South Forks of the Flambeau River (1,320 feet of the ordinary high water mark (OHWM) of the river's edge on both banks). There is also a 400' shoreland management overlay zone (extending inland from the OHWM at the river's edge on both sides of the river) that provides additional emphasis on scenic management that will enhance the visual appearance along the river. Several sites identified as potential native community management areas have been incorporated due to similar management objectives. This area is characterized by a low level of development and low road density, with no additional public roads planned.

#### Summary

- 17,000 acres
- Emphasis on scenic management
- Low road density
- 400' shoreland management overlay zone

### Description of the Forest Resource

The Flambeau River is the dominant feature of this area, defining and shaping recreation and management goals. Forest resources and cover types vary in composition, quality, stocking levels, and growth potential throughout the area. Northern hardwoods is the dominant cover type (52%) throughout the area, with sizes ranging from poletimber to large sawtimber, and regeneration in one-quarter of the stands. The majority of these stands are of medium quality, although high quality stands would be expected based on soils and habitat type. Aspen represents 20% of this area, with stands ranging in age from 26-82 years, with an average of 50 years. The aspen in this area has good to very good growth potential and is mostly pole timber. In some areas it is mixed with red maple, northern hardwoods, and balsam fir and on others, stands have regeneration of white pine, balsam fir, and spruce. Swamp hardwood covers approximately 6% of the area with varying growth potential, and size ranging from pole to large saw timber. On average, these stands are about 75 years old with little regeneration. Hemlock represents only 4% of this area, ranging in size from small pole to large sawtimber. Stands are often mixed with northern hardwoods or red maple. Stands over 120 years old have good growth potential, with varying stocking levels. Forested wetlands also represent 4% of this area. Black spruce is the most common forested wetland followed by balsam fir, tamarack, and cedar. The majority of forested wetlands range in age from 65-85 years, with much of the cedar being over 100 years old. The majority of large white pines are found in the river corridor, although it represents only 3% of the area. It is generally large sawtimber mixed with aspen, northern hardwoods, balsam fir, or spruce. Very little regeneration is found in these stands despite good growth potential. The average age of these stands is approximately 100 years. The remaining area is represented by small amounts of unforested uplands, unforested wetlands, white birch, red maple, white spruce, and red pine plantations.

**Current and Predicted Cover Types**

Cover Types	Current	Projected 50 years
<b>Forested</b>		
Northern Hardwoods	52%	54%
Aspen	20%	18%
Swamp Hardwoods	6%	6%
Hemlock	4%	4%
Forested Wetlands	4%	4%
White Pine	3%	5%
White Birch	2%	1%
Red Maple	2%	2%
White Spruce	1%	1%
Red Pine	1%	2%
<b>Non-Forested</b>		
Wetlands	2%	2%
Uplands	3%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>
*Forested Wetlands include Balsam Fir, Cedar, Black Spruce, and Tamarack. Non-forested wetlands include tag alder and kegs. Non-forested uplands include upland brush and grasses.		

**Land Type Association**

The land type association of this area is primarily Exeland Plains. The characteristic landform pattern is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. Small areas within the river corridor also fall into Flambeau silt capped Drumlins. The characteristic landform pattern is rolling drumlins with swamps common. Soils are predominantly moderately well drained silt loam over acid sandy loam till. The Upper Flambeau River falls within the land type association of Chequamegon Washed Till and Outwash. The characteristic landform pattern is rolling collapsed moraine and outwash plain complex. Soils are predominantly well drained sandy loam over acid loamy sand debris flow or outwash.

**Soils**

Due to the extensive acreage and location of this management area, various soil types can be found. Sandy loams are the predominant soil type. These soils include Pence sandy loam, Padus sandy loam, Manitowish sandy loam, and Shanagolden fine sandy loam. The Vilas-Lindquist complex is also found in this area, which is loamy sand. All of these soils range from moderately well drained to excessively drained. The depth to a restrictive feature is very deep at over 60" for all soils except Shanagolden, which has a restrictive depth of 24-40 inches, making these soils susceptible to wind events. Soil maps will be needed for specific areas along the river.

**Habitat Types**

There are two primary habitat types within this area: AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow

birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers.

**Long Term Objectives**

Provide a wild-appearing, remote, undeveloped setting along the North Fork and South Fork of the Flambeau River offering solitude and high quality back-country recreation within a quarter mile of the Flambeau River. Non-motorized recreation is emphasized, particularly paddling and camping. Forest management will maintain a structurally and functionally diverse forest of mixed hardwoods and conifer species that provide aesthetic and ecological values. Riparian habitats will be maintained and coarse woody habitat will be encouraged.

**Short Term Management Objectives**

- Maintain a somewhat remote and undeveloped natural appearing setting within ¼ mile of the North and South Forks of the Flambeau River.
- Maintain a 400' shoreland management zone extending 400' from the both banks inland (see Flambeau River Shoreland Management Overlay zone at the end of this section)
- Provide opportunities for hiking on primitive trails in locations that are compatible with the primary objectives of this management area. (River recreation is covered below in the Flambeau River Shoreland Management Overlay zone).
- Develop and enhance a closed canopy older-growth forest of pine, hemlock, and northern hardwood species on appropriate sites. Retain and promote Eagle and Osprey nesting trees.

**Management Prescriptions**

- Follow the DNR Old Growth and Old Forest Handbook management guidelines, particularly related to "Managed Old-Forests" on appropriate sites. Monitor composition and structure changes to aid future management decisions.
- Promote the growth and retention of large white pine, yellow birch, cedar, and other northern hardwood species on appropriate sites. Under-planting may be used to increase stocking levels of key species.
- Retain dead snags and coarse woody debris to promote old growth characteristics, except in designated public use areas.
- In areas with predominantly shorter-lived species, convert to longer-lived species where possible while retaining a high visual quality of the area (i.e. to the degree practicable, maintain low level of visibility of management activity). Under-plant if necessary if natural regeneration of desired species is not likely or to speed conversion.
- Actively manage pine plantations through thinning and appropriate regeneration techniques to create stands with a natural appearance and larger diameter trees.
- Limit the extent and frequency of forest management activities necessary to achieve the desired silvicultural response with the least visible sign of management activity. Reduce entry periods by managing for larger sized stands.
- Control invasive species as necessary to maintain aesthetic and ecological integrity; use methods that are consistent with the intent of this management area.
- Consistent with other management prescriptions for this area, conduct salvage operations, emphasizing maintenance and improvement of the long-term visual quality of the area. Plant following salvage if desired forest composition will not naturally regenerate.
- Minimize the visual and audible impacts of forest management activities by harvesting during leaf-off periods, unless a faster response is necessary to address public health and safety concerns, such as removing hazard trees from designated public use sites.

- Locate logging roads and decking sites outside of this management area when possible.
- Low-density, predominantly primitive non-motorized trails may be developed within this management area as part of the property-wide trail system (See Trails in the Recreation Management section of this document.)
- Limit development (i.e. buildings, transmission/telephone lines, motorized trails, and all season roads) except where needed for forest management activities and public safety.

**Alternatives Considered**

1. Leave the current ¼ mile buffer as is.

This was not chosen because it would not allow for scenic enhancements along the river, such as the conversion of plantations to larger, older forest, the salvage of disease, insect, and wind damaged timber, the ability of managing for old forest-extended rotation, and encouraging conifer species (cedar, red and white pine).

2. 100' passively managed buffer along the river with different zones of forest management outside the buffer.

This alternative was not chosen because management outside the 100' buffer would disrupt the remote nature of the area and diminish the original intent of the ¼ mile buffer. Passively managing a 100' buffer would not allow for improvement of aesthetics along the river and upgrading river campsites.

3. Maintain a 400' scenic buffer along the river with general forest management occurring in adjacent areas.

This alternative was not chosen because it would disrupt the remote nature of the area and diminish the aesthetics and the original intent of the ¼ mile buffer.

4. Manage Biotic Inventory primary sites as native community management areas.

This alternative was not chosen because management and ecological objectives are met by the proposed management.

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## MANAGEMENT OVERLAY ZONES

An overlay zone is a planning tool that allows for additional management prescriptions that span multiple management areas. It is most often used when there is a particular resource that requires additional prescriptions to meet the objectives of the zone or area. The objectives and management prescriptions for overlay zones are in addition to those of the underlying management area.

Overlay Zones	Acres
Flambeau River Shoreland Management Overlay	5,000
Wild Lakes Overlay	400
Wilderness Lakes Overlay	1,400
Long-Term Research Areas Overlay	1,200
<b>Total Acres</b>	<b>8,000</b>

## FLAMBEAU RIVER SHORELAND MANAGEMENT OVERLAY ZONE

The Flambeau River State Forest designates a 400' Shoreland Management Overlay Zone for lands in state ownership along both sides of the North and South Forks of the Flambeau River within Area 18: Flambeau River Scenic Area. On the reaches of the upper North Fork Flambeau River in Ashland and Iron Counties, the overlay zone is 300' or all lands in state ownership. The overlay consists of approximately 5,000 acres and will protect and enhance the scenic qualities of the Flambeau River as well as the vegetation, wildlife, and fisheries of riparian areas. Public access to the Flambeau River and associated recreational amenities will be maintained and enhanced. Management objectives and prescriptions for the Shoreland Overlay Zone are listed below. These objectives and prescriptions shall be considered in addition to the underlying management of Area 18: The Flambeau River Scenic Area, with the more restrictive prescription taking precedence.

### Short and Long Term Objectives

- Maintain and enhance the natural, scenic, and largely undeveloped landscape along the shoreline of the North Fork and South Flambeau Rivers.
- Protect and enhance riparian habitats of the Flambeau River and its tributaries.
- Provide and enhance opportunities for solitude and primitive types of non-motorized recreation, particularly canoeing/kayaking and low density primitive and semi-primitive river camping.

### Land Management Prescriptions

- Promote the growth and retention of large trees, favoring white pine, red pine, hemlock, and cedar for their high aesthetic value. Under-planting may be used to increase stocking levels of key species.
- Minimize the visual impact of forest management along the river corridor using aesthetic management techniques such as: restricting the size of cuts, conducting partial harvests, conducting small regeneration cuts with irregular boundaries.
- Locate all logging roads and decking sites outside of this management zone.
- Within 400 feet on both sides of the river, remove or chip slash, or treat it to lie within 24 inches of the ground.
- Generally do not salvage following natural disturbances. Limited salvage and restoration actions may be done when necessary to significantly improve the visual quality of the area. Leave abundant coarse woody debris. Plant if natural regeneration to desired species would not occur or if the regeneration would be unusually slow.
- Retain and promote coarse woody habitat (snags and dead downed trees) along and in the river, except remove hazard trees in designated public use areas.
- Apply invasive species control measures as needed and at the most advantageous time for successful control.
- Passively manage the 300' buffer of the Upper North Fork Flambeau River, except for control of invasive species and for salvage as provided for in this section.
- Passively manage bottomland hardwoods and other wetlands.

### Recreation and Other Public-Use Site Management

- Maintain campsites in a wooded condition with healthy, vigorous trees.
- Cut hazard trees as necessary at campsites, boat landings and other designated public use sites.
- Locate and develop any new canoe campsites, boat landings or other developments so they will be integrated into the natural landscape with minimize visual intrusion on the river. Meet the NR 44.07 design standards for the designated recreational use setting.
- Renovate existing campsites and access points as needed to make them sustainable and to meet the appropriate

NR 44.07 recreational use setting standards. Plant native trees and shrubs as needed for shade and screening.

- Reclaim to a stable, natural appearing condition old campsites, acquired developments, or other sites that have been highly disturbed by human use.

**Authorized Management Activities**

The following activities are authorized in this management area when done in support of and in accordance with the management area's objectives and prescriptions:

- Selective timber harvesting, small patch cutting, non-commercial thinning, and other routine timber stand improvement activities, passive management, selective tree or brush cutting, hand tree and shrub planting, herbicide application, burning, trail or road construction, erosion control, and construction and maintenance of recreational facilities.

## **LONG TERM RESEARCH AREA OVERLAY ZONE**

Public lands provide a wide range of opportunities, including support for research. The Department partners with universities, government, and non-governmental organizations on natural resource research projects across the state. These projects provide valuable information for land managers, resource professionals, and the public. Research in the biological sciences and natural resource management shape land management activities and policy, and enhance our understanding of biological processes regionally and state-wide. Long-term research areas on the FRSF are discussed below.

There are currently two long-term research projects occurring on the forest that will continue under the new master plan. Both research projects focus on old-growth forests and associated characteristics in northern hardwood forests.

## **MANAGED OLD-GROWTH SILVICULTURAL STUDY (MOSS) OVERLAY ZONE**

This is a 50 year research study being conducted by the Department. These stands are part of an experiment to study managed old growth characteristics and the potential effects of different silvicultural methods on ecological and social objectives. The stands will also provide demonstration areas for training. Research focuses on forest management of northern hardwoods to accelerate old growth characteristics, which include coarse woody debris and manipulating the size of canopy gaps. Silvicultural methods used include shelterwood cuts, thinnings, and gap creation. There are 4 areas, three for research and one control, totaling 498 acres. This overlay is found in Area 1: Exeland Plains Hardwoods (381 acres) and Area 5: Jump River Hardwoods (117 acres). See individual area write-up for underlying management.

### **Long and Short Term Objectives**

- Enhance or accelerate the development of old-growth characteristics through active management except for control stands.
- Establish canopy gaps in sizes deemed to meet research objectives
- Maintain control stands as baseline comparison
- Promote adaptive research and provide research opportunities for the biological sciences and natural resource management communities consistent with the underlying area land management objectives.

### **Management Prescriptions**

- Using standard silvicultural methods such as shelterwood cuts, thinnings, or group selection and installation of canopy gaps to enhance or accelerate old-growth characteristics.
- Favor hemlock, yellow birch, ash, basswood, red oak, black cherry, and other uncommon tree species when possible on appropriate sites for compositional diversity.
- Reserve tree and snag retention for coarse woody debris.
- Evaluate stands in (2018-2023) with the potential application of more gaps and stand-wide thinning.
- Passively manage control stands
- In the event of a windstorm or fire, salvage logging at this site requires written approval by the division administrator for the Division of Forestry and the Bureau of Enforcement and Science
- New or additional research in these areas must be agreed upon by the Division of Forestry
- Use of BMPs for water quality to protect aquatic features.
- Protection of ephemeral ponds by leaving canopy and equipment restrictions.

## UNIVERSITY OF WISCONSIN OLD-GROWTH RESEARCH PROJECT

This is a 50 year research study conducted by the University of Wisconsin-Madison's Department of Wildlife and Forest Ecology. The area consists of a core research area (687 acres) and a 100 meter buffer (125 acres) that is managed using selective, extended rotation harvest techniques (see Map 2.1: FRSF Land Management Classifications). Within the core research area there are active research plots and control plots. This overlay can be found in Area 14: Flambeau Forks Interior Forest Native Community Management Area (see area write-up for underlying management).

### Long and Short Term Objectives

- Provide research plots, control areas, and buffer areas for old-growth forest research.
- Provide demonstration areas and educational opportunities.
- Promote adaptive research and provide research opportunities for the biological sciences and natural resource management communities.

### Management Prescriptions

- Selectively harvest northern hardwoods.
- Use adaptive research techniques, such as creating canopy gaps and movement of coarse woody debris.
- Use single tree selection and old forest-extended rotation harvesting in the 125 acre buffer zone.
- Passively manage control stands.
- All actions shall be consistent with the objectives identified in Area 14: Flambeau Forks Native Community Management Area.
- New or additional research in these areas must be agreed upon by the division administrator for the Division of Forestry and the Bureau of Enforcement and Science

## WILD AND WILDERNESS LAKES OVERLAY ZONE

The Wild and Wilderness Lake designation refers to a lake or a grouping of lakes of 5 or more acres with an undeveloped shoreline, limited to no road access, and no structural development except for primitive campsites, and where human influence upon the landscape is not visible from the lake. These designations restrict motorized access, motorized watercraft, and most recreational development, as well as land management activities within 400 feet or ¼ mile of shoreline areas. Recreation on these lakes promotes a remote, backcountry experience. Wild and wilderness lakes on the forest are listed in the table below.

Lake	Acres of Water	Classification
Bass	708	Wilderness
Swamp	744	Wilderness
Hanson	148	Wild
Champagne	28	Wild
Little Pelican	77	Wild

## WILDERNESS LAKE OVERLAY ZONE

Wilderness Lake shorelines are primarily forested, varying with site characteristics and the area's management history. These lakes are passively managed within ¼ mile of shoreland areas. Shorelines are undeveloped except for primitive campsites and there is no motorized public access. Motor vehicle use is allowed to respond to significant health and safety emergencies or to accomplish necessary land management activities as specified in the master plan.

There are two wilderness lakes on the forest, Swamp Lake and Bass Lake. Swamp Lake is 744 acres and is found in Area 11: Swamp Lake Native Community Management Area (see area write-up for detailed management prescriptions). Bass Lake is 708 acres and can be found in Area 12: Bass Lake and Peatlands Native Community Management Area (see area write-up for detailed management prescriptions). The shorelines are undeveloped and while primitive campsites are permitted, none are planned for these lakes.

### Short and Long Term Objectives

- Maintain the lakes in an undeveloped condition with minimal signs of human influence for recreational, ecological, and habitat values.
- Provide remote, non-motorized, low-impact recreation (on water and land) in a wild setting with limited-non-motorized access.

### Management Prescriptions

- Passively manage the entire ¼ mile buffer around the lake, except to remove invasive species, forest restoration, or maintain designated trails.
- Salvage generally will not occur in passive areas unless necessary to meet statutory responsibilities. In actively managed areas, salvage of trees damaged by wind, ice, fire, and insects, may occur after consultation with managers from affected DNR programs to determine how salvage can be done to help meet the objectives of the area.

## WILD LAKE OVERLAY ZONE

The shorelands of wild lakes are primarily forested, with composition varying with site characteristics and the area's management history. These lakes are passively managed within 400 feet of shoreland areas. Shorelines are undeveloped, with the exception of primitive campsites. Motorized public access to the lake is limited to designated access roads, with all other motorized recreational vehicle use within the Wild lake Management Zone prohibited. Motor vehicles may be used when needed to respond to significant health and safety emergencies or to accomplish necessary land management activities as specified.

There are 3 wild lakes on the forest: Hanson Lake (148 acres), Champagne Lake (28 acres), and Little Pelican Lake. Hanson Lake is located in Area 10: Hanson Lake Complex Native Community Management Area, Champagne and Little Pelican lakes are within Area 3: River Sands Mixed Hardwoods Forest Production Area (see area write-ups for detailed management prescriptions).

### Short and Long Term Objectives

- Maintain the lakes in an undeveloped condition, with minimal signs of human influence for recreational, ecological, and habitat values.
- Provide non-motorized recreation for low-impact activities such as boating, canoeing, fishing, or primitive camping where appropriate.

### Management Prescriptions

- Permit natural processes to predominate: Passively manage the entire management area (a 400 foot wide buffer around the lake shore). Exceptions are allowed for the removal of invasive species, for forest restoration (i.e. thin pine plantations to restore them to a more natural appearing condition), limited tree-drops for fish habitat restoration, to restore roads to a natural condition, or to maintain designated trails and primitive canoe campsites.
- Limited shoreline tree-drops may be used where needed to add coarse woody debris for restoration and enhancement of aquatic habitat. This shall be done in a manner that maintains a general natural appearance along the shoreline, as required for a Wild Resources Management Area and Type 2 Recreational Use Setting (NR 44.06(10)). Motorized watercraft or other motorized equipment may be used for this fishery habitat restoration and for associated monitoring of the fishery populations.
- Provide limited public water access ranging from carry in trails or designated lightly developed road access. Locate vehicle parking in areas not visible from the lake.
- Restrict all motor vehicle use within 400 feet of the lake except for existing and designated lake access roads.
- Motorized vehicles or watercraft are not allowed for routine management activities. They may be used only when responding to health and safety or other emergencies, or to conduct restoration and collection activities authorized by this plan.
- Primitive to lightly developed trails for non-motorized uses may be located within the Wild Lake Zone
- Actively suppress forest fires that threaten areas outside of the management area using the minimum actions required. Restore any soil disturbed to its original topography.
- Monitor insect, disease, and invasives for outbreaks and take action only when there is a strong threat to forests outside of the management area.
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs to determine how salvage can be done to meet the objectives of the area.

## STATE NATURAL AREA DESIGNATIONS

State Natural Areas (SNAs) are part of a statewide system of sites identified for the purposes of ecological research, education, and to assure the full range of ecological diversity for future generations. There are currently two State Natural Area designations on the Flambeau River State Forest; Flambeau River Hardwood Forest - 370 acres and Lake Of The Pines Conifer-Hardwoods - 156 acres.

Modifications to the existing State Natural areas and potential additional State Natural Areas are not identified or proposed in this phase of the planning process. Rather they are proposed after the land management areas and area objectives have been determined. The proposed land management area objectives assist in evaluating areas for SNA designation. Future proposed State Natural Area designations do not change the underlying management objectives, prescriptions, or authorized activities.

## WILDLIFE MANAGEMENT

The Flambeau River State Forest supports a great diversity of wildlife species, including game, furbearer, and bird species common to Northern Wisconsin. A wide variety of birds migrate through the Flambeau River State Forest as well. The Flambeau River itself, whether free flowing or impounded, provides important habitat for many wildlife species. Endangered and threatened species (listed species) and special concern species on the forest include the following: Osprey, Bald Eagle, Wood and Blanding's Turtle, extra-striped snaketail and pygmy snaketail dragonflies. The Flambeau River State Forest contains 10 special concern animals including birds, reptiles, amphibians, insects, and crustaceans.

## WILDLIFE HABITAT MANAGEMENT

The wildlife management program on the Flambeau River State Forest focuses on maintaining and enhancing habitat and assessing the population status of important game, non-game, and listed species. The abundant wildlife on the Flambeau River State Forest requires diverse forest habitats in all successional stages from young to old growth forests. Diverse and healthy wildlife populations will be maintained by managing the composition and structure of forest habitats integrated with the management objectives and activities outlined for each land management area in the Land Management Section of this plan. Wildlife habitat values are further assured by the wildlife biologists working with foresters on timber sales in order to maximize tree species diversity and improve vegetative structure consistent with the management objectives for the area.

This wildlife management plan has been integrated into the management prescriptions for the individual management areas.

## FORESTED HABITATS

Approximately 22% of the Flambeau River State Forest will be managed for early successional cover types, such as aspen and white birch. These stands will be maintained through coppice harvests for mixed stands of aspen/white birch and shelterwood harvests for white birch stands. There will be a diversity of age classes by harvesting some aspen stands before economic rotation and some aspen stands beyond economic rotation. While aspen-birch forests are dominated by aspen, they also contain a mixture of various pines, oaks, maples, and white birch.

40% of the forest will be managed for northern hardwoods. This cover type will be managed to diversify age class, size, and composition.

3% of the forest will be managed for hemlock hardwoods, once a dominant cover type on the forest. Due to many factors, including wind damage, climate change, and deer browse, this cover type has been greatly reduced, although there are numerous small pockets of large, old hemlock stands scattered across the forest. Hemlock hardwood stands will be passively managed, with some selective harvesting of other species in the stands to enhance existing hemlock and to promote regeneration.

8% of the forest will be managed for red maple, which is found on wet and dry sites. This cover type is both a major and minor component of mixed stands, as well as a pioneer and sub-climax species that is more shade tolerant and longer lived than many early successional species such as aspen and white birch. Even-aged management is the preferred silvicultural method for maintaining red maple. Lower quality sites with fiber potential will be rotated and regenerated using coppice management. Higher quality sites with saw-log potential will be managed with either shelterwood or group selection regeneration techniques. Where appropriate, higher quality sites with saw-log potential may be converted to northern hardwoods.

9% of the forest will be managed for swamp hardwoods, which are characterized by black ash and red maple, occupying a wet forest environment. Productive stands of swamp hardwood may be regenerated by limited harvesting (partial openings or shelterwood cuts) and those within 400' of the Flambeau River will be passively managed.

8% of the forest will be managed for high conservation value forests, providing a wide range of social and ecological values. On the FRSF, these forests will become older with many of the structural attributes associated with old-growth forests and the presence coarse woody debris and den trees. Management will include passive and active, with an emphasis on retaining large, individual trees.

Older forest and closed-forest canopy habitats are underrepresented on the Flambeau River State Forest. The primary forest types best suited to the soils on the Forest are white pine, red pine, lowland conifer, swamp hardwoods, bottomland hardwoods, northern hardwoods, and hemlock. Most lowland conifer stands, especially white cedar stands, will be passively managed. Many of the rare plants and animals found on Flambeau River State Forest are associated with this habitat. Designated riparian corridors, such as the 17,000 acre Flambeau River Scenic River Area, will also provide areas of older forest. As time passes and more of these stands begin to reflect the characteristics of older forests, the wildlife species that use them should become more prevalent. Passive and active forest management will be employed to meet stand objectives.

The white pine community will slowly increase throughout the Flambeau River State Forest. Individual trees will be grown to biological maturity. Stands of white and red pine will be thinned from below and grown to biological maturity. Active forest management will allow the slow expansion of white pine throughout the Flambeau River State Forest.

Up to 3% of the Flambeau River State Forest will be maintained in grassy openings (natural and constructed). Most forest openings occur in areas of the Flambeau River State Forest managed for aspen, white birch, and northern hardwood. The openings will be maintained by herbicides, mechanical mowing, hand cutting, and prescribed fire. Openings are maintained on a rotational basis over a several year period as staff and budgets are allocated.

Long-lived trees such as yellow birch, white pine, red pine, spruce, oak, and hemlock may be retained in coppice harvests to provide for species and stand composition diversity at densities that will not compromise the objective of the harvest. Small clumps of aspen-birch may be reserved in coppice harvests for ruffed grouse budding and cavity trees.

Large, full-crowned trees with dens and cavities as well as dead trees (snags) will be maintained on appropriate sites in all management areas (for more information see the WDNR Silvicultural Handbook, chapter 24). These trees will be retained unless they are unsafe, or increase insect pests. Forest stands subject to large-scale death from disease, insects, or fire will be salvaged.

## **NON-FORESTED WETLANDS**

All non-forested wetlands, including Northern Sedge Meadows, Shrub-carr, Boreal Rich Fen, and Open Bogs will be protected. These wetlands provide habitat for a wide variety of wetland wildlife including species of special concern. Protective management prescriptions for non-forested wetlands are outlined in the Land Management Section of this plan.

## **AQUATIC HABITATS**

Undeveloped lake and stream shoreline is important wildlife habitat. All undeveloped lake and stream shoreline will be managed to protect water quality, maintain wildlife and fisheries habitat, and enhance aesthetics. Shoreline management will include vegetative zones. They will be maintained by following Best Management Practices for Water Quality when performing all forest management activities.

Ephemeral Ponds and permanent small ponds provide important breeding sites for amphibians and waterfowl. These sites will be protected through vegetative management adapted to minimize impacts and by following Best Management Practices for Water Quality.

## **ENDANGERED, THREATENED, AND SPECIES OF SPECIAL CONCERN**

Individuals of all endangered, threatened, and special concern wildlife species will be protected.

All known critical habitat for these species will be protected or maintained through management which incorporates guidance from staff specialists, research and current literature. Examples of critical habitat includes sites used for breeding and foraging such as bald eagle and osprey nest sites; wood and Blanding's turtle nest sites; wolf den and rendezvous sites; and Red-shouldered and Northern Goshawk nest territories. The Natural Heritage Inventory database (NHI) will be searched prior to all timber sales, ground-breaking projects, and recreational and trail development.

## **INTEGRATED MANAGEMENT**

Most of the forest habitat work on the Flambeau River State Forest occurs through the timber sale program. Activities associated with timber sales directly impact wildlife habitat. Wildlife biologists review all timber sales and provide recommendations to maintain and improve wildlife habitat.

## **WILDLIFE POPULATION MONITORING**

At present, several populations of important game species will be monitored through annual surveys on the Flambeau River State Forest. These surveys include: deer, bear, furbearers, ruffed grouse, turkey and woodcock. Annual surveys provide valid population information for management of species on a unit, zone or statewide basis.

Surveys are conducted annually for certain rare animal species, using established protocols and survey routes. Species surveyed include bald eagle, osprey, and timber wolf. Rare and uncommon wildlife such as Wood and Blanding's turtles, bull frogs, Red-shouldered Hawks and Northern Goshawks are monitored through reports from staff and citizens. The reports are organized in the Bureau of Endangered Resources' NHI database.

## **WILDLIFE POPULATION MANAGEMENT**

Game species are managed through hunting and trapping seasons. Each game species has a population goal set for a certain local or regional area. Hunting and trapping regulations and population goals are not set through the Master Planning process. Game populations are managed through regulations and goals set by the Natural Resources Board and the Voigt Intertribal Task Force. The public is involved in all stages of this review and implementation process.

## **WILDLIFE RESEARCH**

DNR, tribal and university-sponsored wildlife research may occur on the Flambeau River State Forest. New research projects may be undertaken if they do not conflict with this master plan.

## **WILDLIFE REINTRODUCTIONS**

### **Elk**

Elk were reintroduced into Wisconsin several years ago and the population continues to increase. There is a possibility that elk will expand their range naturally into the northern portions of the Flambeau River State Forest. Elk management will be primarily focused on the pioneer species habitat types, such as aspen. No anticipated changes in current timber management will be needed to accommodate the habitat needs of elk if they become present on the forest.

The current State Elk Management Plan allows for the relocation or reintroduction of Elk into unoccupied areas within the State. Evaluations of suitable habitat are being evaluated. The State Elk Biologist will work with all stakeholders, including the Flambeau River State Forest, to determine if there are suitable locations and habitat on the forest for the expansion or reintroduction of elk.

### **American Marten**

Pine marten were reintroduced in Wisconsin several years ago. Ongoing reintroduction of marten occurs just north of the forest in the adjacent Chequamegon-Nicolet National Forest. Favorable habitat, including mature forest with abundant snags and downed woody debris is found in the northern portion of the forest along the North Fork of the Flambeau River. It is possible that as pine marten become more established, their range could expand to include the FRSF. Pine marten is an endangered species and any reintroduction efforts would include intra-agency coordination to identify habitat needs and considerations for optimal success.

## RECREATION

### BACKGROUND

Recreation on the Flambeau River State Forest is important to many people and contributes to the regional tourism economy. Visitors have been coming to the river and its adjacent lands for generations, and those who vacation or live near the forest know the beauty of the river, the trails, and the extent of its forests. Recreational opportunities abound on the water and throughout the forest.

Annual visitation to the Flambeau River State Forest has been steady for the last 20-25 years. The most popular recreational activities include river paddling and camping, fishing, snowmobiling and ATV riding, and hunting. There is also demand for new and improved recreational trails like hiking, bicycling, and increased amenities at campgrounds, such as showers and electric-hook ups. River use and camping on the Flambeau River State Forest is one of the primary recreational draws to the forest. Increasing all types of camping and separating camping types, especially group and individual camping, will not only provide more camping options, but will also disperse river users and enhance the remote, scenic qualities paddling enthusiasts seek on the forest. All new developments and upgrades will be use principals and guidelines for environmental sustainability.

Many comments and suggestions for outdoor recreation were received. A range of recreation topics was drawn from them and alternatives considered for each. Following are recreation management objectives and preferred alternatives by recreation type. Alternatives considered but not chosen are discussed after each preferred alternative. Map 2.2 illustrates current and planned recreation developments, while maps 2.2. A-E illustrates the current and planned changes to river recreation.

### RECREATION MANAGEMENT OBJECTIVES

- Preserve the wild and remote character of the forest and river corridor while continuing to provide opportunities for public access and recreation.
- Provide a range of camping opportunities by maintaining and upgrading existing camping facilities and by establishing new or enhanced facilities including primitive, semi-primitive, and group canoe camping; rustic family campgrounds and outdoor group camps; and hunting, fishing camps and backcountry permit camping.
- Provide areas for day uses such as picnicking, boating, swimming as well as passive recreational activities by maintaining and enhancing existing facilities and by establishing two new day use areas—one at slough Gundy and another at Hervas landing.
- Provide access to the waters of the Flambeau River by maintaining or upgrading the existing boat landings and canoe access points.
- Provide a system of non-motorized recreational trails by maintaining and enhancing existing trails and by the establishment of new trails.
- Maintain designated motorized recreation trails, All-Terrain, and snowmobile trails. Establish new connector routes and re-routes of existing trails as needed to more efficiently connect to regional trail networks as opportunity and resources allow.
- Maintain and support traditional outdoor sporting activities such as hunting, trapping and fishing by maintaining a network of hunter-walking trails and enhancing or upgrading existing boat landings, access points, and other facilities
- Develop educational initiatives to enhance visitor experience and by upgrading and installing information facilities at key public contact points, landings and trailheads.

How these objectives will be met is discussed by recreation type on the following pages.

## RIVER RECREATION

The Flambeau River is the dominant feature of the forest and a primary draw for forest recreation. The river offers one of the best canoeing and kayaking opportunities in the state, with over 75 river miles in a remote setting. Recent public involvement and a 2007 river survey indicate that wilderness and solitude is of primary importance to river recreationists. The river is used by day paddlers and those seeking multi-day trips. Day use and river camping has generally remained steady over the past 30 years, with an increase in the number and size of groups paddling the river.

Along the North Fork of the Flambeau River there are currently 14 designated campsites intended to serve from 12 to 18 campers. The design and spacing of existing campsites is outdated, with no opportunities for primitive camping. There is also no camping along the South Fork or Upper Flambeau River, or campsites designed for ADA accessibility.

Concerns expressed by the public and resource managers on river camping include: environmental impacts, user conflicts, and law enforcement. Concerns are related to the number or concentration of river users and lack of available facilities and resources to manage them, especially at popular locations and at peak times.

A detailed summary of current and planned river camping amenities can be found in Table 2.2: Current and Planned River Camping Developments and Designations on the North and South Forks of the Flambeau River. Maps 2.2 A-F show current and planned river camping and camping designation by type. All site locations are approximate and will be evaluated based on site criteria.

### Overview of the Preferred Alternative

The primary goal of Flambeau River State Forest is to protect environmental integrity and the wild and scenic nature of the river corridor. The Flambeau River corridor is designated as a scenic management area which will protect and maintain the wild and remote nature of the river corridor. A mix of recreational use “settings” or classifications will be applied to reflect the desired level of remoteness, levels of river use and development, and ecological conditions along the river. A mix of campsite facilities will be provided to accommodate a range of user experiences.

Implementation of the preferred alternative will occur gradually as river campsites and landings are rejuvenated and redeveloped, needs are assessed, and resources become available. Restoration and new development work may occur concurrently to address issues while also accommodating river users' needs.

Table 2.1: Current and Planned River Camping Developments

Camping Type	Current			Planned		
	Number of Sites	Capacity per site	Total Capacity	Number of Sites	Capacity per site	Total Capacity
Primitive	0			19	6	114
Semi-primitive	35	6	210	11	6	66
Group	0			12	15	180
<b>TOTAL</b>	<b>35</b>		<b>210</b>	<b>42</b>		<b>360</b>

### Campsite Restoration

Existing camping areas will be renovated and redeveloped to meet current standards of administrative code. Some campsites will be redeveloped to accommodate groups of up to 15 campers while others will be restored as clustered, semi-primitive sites, each designated for families or small groups of up to six individuals. By necessity, some new campsites will be constructed to replace those displaced during re-development. Improvements will focus on areas in greatest need of restoration, areas that are heavily used, and locations where user conflict occurs.

The objective is to restore and redevelop recreational facilities along the river to a sustainable level; update campsites to meet current standards; separate and disperse camping opportunities along the North Fork of the Flambeau River to reduce negative impacts to natural resources; and to reduce user conflict and congestion at popular campsites and landings.

### **New Development**

New campsite development will be determined based on ecological sustainability and ability to meet code standards. Development will focus on installing facilities in new locations to diversify camping opportunities and river trip options.

The objective is to provide more camping opportunities and to diversify camping experiences and river trip options. Several different campsite designs - group, semi-primitive and primitive - will be offered. Each will provide a different type of camping experience. Amenities and camper capacity will be increased within the capabilities and limitations of the resource. Historic campsites, places along the river that have a tradition of use but are not currently designated for camping, will be recognized and considered when locating new primitive campsites. Proposed campsites are identified on the planned recreation map but are only approximate locations. Exact locations will be based on local conditions and surrounding land management classifications to avoid impacts on the landscape.

### **Planned Development**

#### **North Fork**

##### *Group Campsites*

- Re-develop and convert 9 existing semi-primitive camp areas consisting of clusters of 2-3 sites into 9 group campsites.
- Develop up to 3 new group campsites.
- Designated use: group campsite to serve up to 15 campers.
- Amenities: one picnic table and fire ring for cooking, one fire ring with benches, vault toilet, gated road access for management purposes.

##### *Semi-primitive Campsites*

- Re-develop 3 existing camp areas to create up to 6 semi-primitive campsites.
- Develop 4 new semi-primitive campsites in new locations.
- Design: 400' or more of separation between sites, located away from group sites, and at least 150' from roads and trails (except access spur). Sites may be clustered in a camping area
- Designated use: each campsite is designated for use by families or groups of six persons or less
- Amenities: leveled and firm tent pads, one picnic table and fire ring per campsite, vault toilet shared among a cluster of two or three sites, gated road access for management purposes.

##### *ADA Accessible Campsite*

- Develop 1 semi-primitive ADA accessible campsite on the North Branch of the river designed to accommodate ADA river travelers and their canoeing party.
- Designated use: fully ADA accessible, each campsite for use by families or groups of six persons or less
- Amenities: fully ADA accessible facilities, dock/ramp, table, fire ring, vault toilet. An accessible landing will be developed /maintained upstream and downstream from the campsite location.

##### *Primitive Campsites*

- Develop up to 15 new primitive campsites in new locations on the North Fork to diversify camping opportunities and river trip options. Campsites will be interspersed with others along the river.

- Designated use: each campsite for use by a family or group of six persons or less.
- Design: campsites are widely dispersed (cannot see or hear other campers), 150' or more from access roads and trails, with water access only. Sites are minimally cleared with limited development. Primitive campsites are remote locations with a lower expectation for services and access, and a higher expectation of privacy and solitude.
- Amenities: each campsite will have a fire ring, and a box latrine. It may or may not have a picnic table, and may have upgrades for disabled access.

#### *Day-use /Picnic Areas*

- Convert Cedar Rapids camp area to an undesignated, undeveloped open area. Create new campsites at locations upstream and downstream from current location.
- Convert Hervas Landing to a designated, water-access-only, day-use and picnic area. Relocate existing campsites away from Hervas Landing camp.

#### *Rustic Campground*

- Develop 1 small rustic campground along the river near forest headquarters and accessible to a river landing
- Designated use: provide 5-10 campsites, each for use by a family or group of six persons or less, to serve from 30-60 total campers. Some sites may be walk-in.
- Design: conventional state forest rustic campground, separation distance of 100-200 feet between campsites, vehicle accessible.
- Amenities: each campsite will have a tent pad, fire ring, picnic table, and vehicle parking. A hand pump or pressurized water source, trash receptacles, rest rooms, and RV dumping station are available nearby.

### **South Fork**

#### *Primitive Campsites*

- Develop 2 new primitive single-unit campsites on the South Fork east of Highway M.
- Develop 2 new primitive single-unit campsites on the South Fork west of Highway M.
- Designated use: each campsite for use by a family or group of six persons or less.
- Design: campsites are widely dispersed (cannot see or hear other campers), 150' or more from access roads and trails, with water access only. Sites are minimally cleared with limited development. Primitive campsites are remote locations with a lower expectation for services and access, and a higher expectation of privacy and solitude.
- Amenities: each campsite will have a fire ring, and box latrine. It may or may not have a picnic table.

#### **Alternate-Use Campsites**

- Where opportunity allows, based on patterns of use, topography and ecological conditions, an equal number of alternate-use campsites will be developed in the vicinity of each camping area to allow for campsite restoration. Alternating use will allow natural recovery of heavily used sites. While this potentially doubles the number of campsites, only half of them would be open and active at any given time. Alternate-use sites would be developed added only as needed, and as budget and staffing allows.

#### **Concurrent Management Activities**

- Educational outreach and information facilities will be developed at landings and key locations to inform visitors about opportunities and responsibilities for river recreation.
- Law enforcement presence will be maintained in concert with educational efforts to promote safe and sustainable river recreation.
- Campsite locations will be clearly marked to show designated use and campsite occupancy, and to make them visi-

ble from the river. Maps and camping rules will be posted at individual campsites and landings.

- River camping will only be permitted at designated sites. Sites are designed for a one-night-only stay by persons travelling exclusively by watercraft. All people and supplies must be transported by watercraft to the campsite. Winter-only access will be allowed for backpack camping by special permit.
- Organizations and recreation providers will be encouraged to limit the size of river groups, or to split large groups into smaller units of 15 or fewer people, to fit new group camp capacity.

#### Other management options under consideration

- Expanding the container regulations on the river.
- Establishing alcohol-free zones for known problem areas.
- Using a permit system to accommodate large group requests.

#### Alternatives Considered

1. Scale back existing development to return the North Fork river corridor to a more primitive condition.

This would involve removing existing infrastructure to establish a more primitive level of river use, such as: removing vault toilets, removing clustered campsites; closing and restoring popular, heavily used campsites and locations used by large groups; reducing road access and converting camping facilities to individual primitive campsites. This alternative doesn't fully acknowledge current demand and established patterns of recreational use.

2. Fully expand recreational facilities.

The objective is to disperse and diversify river camping opportunities. Old campsites would be redeveloped and new sites provided to accommodate different sized groups, and to provide a range of camping experiences, including: primitive, semi-primitive, group, and rustic campgrounds.

This alternative increases recreational opportunities, but also raises the level of development and overall camper capacity on the river. The preferred alternative calls for a strategic approach to diversify camping opportunities and expand them gradually to balance demand and need.

3. Restore and redevelop existing campsites to meet current code while limiting the size of camping groups and maintaining camper capacity at current levels.

The majority of existing camp areas would be converted to group campsites, each with a maximum capacity of 12 or fewer campers. Some new campsites would be developed to replace sites lost to redevelopment. Camping opportunities would be limited and less diverse than the previous proposal. This option holds the line on recreational development, but it limits management options and flexibility to provide facilities to address future needs or recreational trends.

4. Develop campsites to accommodate large groups of 50 or more people.

This alternative would actually increase overall environmental impact and may encourage more large-group participation, increase congestion on the river, and lead to crowding.

5. Develop some campsites off-water, farther from the river. This would help separate campsites and further limit their visibility from the shoreline.

This alternative presents some challenges such as needing access trails from the river with places to land and park canoes/kayaks overnight. Trails would have to route people from the river without disturbing other groups or passing through their campsites. Off-water sites may also be less popular than those nearer the river but would probably be used when other sites are occupied.

6. Place campsites on a reservable system.

This alternative was considered difficult to administer given the linear nature of river travel, distance of sites from staff headquarters, and multiple river access points.

Table 2.2 Current and Planned River Camping Developments and Designations on the North and South Forks of the Flambeau River

River Section	Current				Planned				
	Campsite Name	Campsite Type	# of Sites	Max Capacity	Campsite Name	Campsite Type	# of Sites	Max Capacity	Planned Actions
Section 1  Nine-mile to Dix Dox	County Line	Semi-primitive	2	12	County Line	Group	1	15	Redesign site and convert to one group site
	Oxbo	Semi-primitive	3	18	Oxbo	Group	1	15	Redesign site and convert to one group site
						Semi-Primitive	1	6	Develop new semi-primitive site
						Semi-Primitive	1	6	Develop new semi-primitive site
						Primitive	4	6 each	Develop 4 new individual primitive sites
Section 2  Dix Dox to Hwy W	Log Creek	Semi-primitive	2	12	Log Creek	Group	1	15	Redesign site and convert to one group site
	Mason Creek	Semi-primitive	2	12	Mason Creek	Semi-primitive	1	6	Redesign and restore, space sites >400 feet
						Semi-primitive	1	6	
	Babb's Island	Semi-primitive	2	12	Babb's Island	Group	1	15	Redesign site and convert to one group site
						Semi-primitive H	1	6	Develop Semi-primitive handicap accessible
Forest Head-quarters						Primitive	2	6 each	Develop 2 new individual primitive sites
						Campground	5-10	30-60	Develop new 5-10 site campground on river
Section 3  Hwy W to the Forks	Headquarters	Semi-primitive	3	18	Headquarters	Group	1	15	Redesign site and convert to one group site
	Boy Scout	Semi-primitive	3	18	Boy Scout	Group	1	15	Redesign site and convert to one group site
	George's	Semi-primitive	3	18	George's	Semi-primitive	1	6	Redesign and restore, space sites >400 feet
						Semi-primitive	1	6	
	Camp 41	Semi-primitive	3	18	Camp 41	Group	1	15	Redesign site and convert to one group site
	Wannigan	Semi-primitive	2	12	Wannigan	Group	1	15	Redesign site and convert to one group site
						Primitive	4	6 each	Develop 4 new individual primitive sites
Section 4  The Forks to Southern Forest Boundary	Forks	Semi-primitive	2	12	Forks	Semi-primitive	1	6	Redesign and restore, space sites >400 feet
						Semi-primitive	1	6	
	Bear Run	Semi-primitive	2	12	Bear Run	Group	1	15	Redesign site and convert to one group site
	Hervas	Semi-primitive	3	18	Hervas	Day-use	0		Convert to day use, close to camping
	Cedar Rapids	Semi-primitive	3	18		none	0		Close to camping and all use
						Group	3	15 each	Create 3 new group sites
						Semi-Primitive	1	6	Develop new semi-primitive site
						Semi-Primitive	1	6	Develop new semi-primitive site
Section 5 South Fork						Primitive	5	6 each	Develop 5 new individual primitive sites
						Primitive	4	6 each	Develop 4 new individual primitive sites

Primitive sites: fire ring, box latrine; Semi-primitive sites: pit toilet, fire ring, picnic table, gated access road for management purpose; Group Sites: pit toilet, fire ring, picnic tables, gated access road for management purposes

## CAMPING

### **Campgrounds**

There are two rustic campgrounds on the forest – Lake of the Pines, with 29 campsites and Connors Lake, with 30 sites. Each campground offers a nature trail, beach access, plus conventional state forest facilities including vehicle parking, tent pads, vault toilets, picnic tables, fire rings, and drinking water. None of the campsites are reservable, have electric hook-ups, or have shower facilities.

Current users prefer rustic camping and many come from surrounding communities. Statewide, family camping continues to be popular but campers have limited time available. More families find the need to plan ahead. As family and RV camping increases, reservable campsites are popular to accommodate increasing family and RV camping demand. Many campers are seeking electrical service at campsites. Providing electrical sites and other amenities can expand campground occupancy, especially into the shoulder seasons.

### **Preferred Alternative**

#### **Connors Lake**

A percentage of campsites at Connors Lake Campground will be upgraded with modern amenities such as electric hook-ups and a portion of campsites will be added to the campground reservation system. Reservable, “walk-in-only” campsites with lake access will be added to diversify camping opportunities. All sites provide a tent pad, picnic table, and fire ring. Overflow parking will be developed as needed.

#### **Lake of the Pines**

Lake of the Pines Campground will remain a “rustic” family campground but will receive general site improvements and code upgrades to provide a wider range of camping opportunities. Overflow parking will be developed as needed.

### **New Camping Developments**

- One new rustic campground with 5-10 campsites (see river recreation) will be developed near the Forest Headquarters. Intended to accommodate late arriving river-users, it will also provide a convenient day-trip opportunity and disperse river users at downstream landings and campsites.
- A new shower building will be centrally located on the property to accommodate campers and other recreationists.
- A reservable outdoor group campground will be developed near a water resource (not yet determined). This facility is to provide a rustic camping experience for organized groups, such as youth groups, without affecting other campers. Amenities will include: a source for drinking water and vault toilets. This will be a gated campground with restricted vehicle access. It will accommodate up to 50 campers and may be occupied for up to seven nights on a reservable, fee basis.

### **Management Actions:**

- Upgrade Connors Lake Campground - add electric service to a percentage of sites. Designate some reservable sites. Improve accommodations for RVs as site and topography allows.
- Maintain Lake of the Pines as a “rustic” campground.
- Place a portion of campsites on the statewide campsite reservation system.
- Construct a shower building with pay showers in a centralized location to serve campground occupants, river recreators and trail users.
- Develop a small rustic campground with 5-10 sites in the vicinity of the river and forest headquarters.
- Increase green space and improve the beach at Lake of the Pines campground.
- Provide campground host(s) with appropriate campsite facilities.
- Replace bathroom facilities at Lake of the Pines campground.

- Bring campgrounds up to current standards for site spacing as sites and topography allow. Attempt to maintain the existing number of campsites.
- Promote /maintain the remote rustic character of the campgrounds.
- Develop some reservable “walk-in”-only campsites with lake access, but with the same facilities as the other campsites, at Connor’s Lake campground.
- Provide alternate parking for trailers, boats, and overflow parking.
- Provide an open “free-play” area at each campground.
- Install or upgrade nature trails and information facilities – see Education
- Explore opportunities for overnight boat mooring facilities at Lake of the Pines and Connors Lake campgrounds.

**Alternatives Considered**

1. A range of amenities and improvements was considered, including playgrounds, providing more sites with electrical hookups, and motorized recreation camping.

Elements that were most suited to needs and demands were incorporated into the preferred alternative, such as providing some campsites with electricity, providing “free-play” areas, and designating some reservable campsites.

**Permit Camping**

The FRSF has a long history of permit camping for hunting, fishing, and backpacking. Traditional camps are established annually for deer hunting and sturgeon fishing parties. Many groups of family and friends have hunted, fished and camped together for decades. Occasional congestion and user-conflict occurs at some popular locations in the forest. Individuals also seek out camping permits for remote recreational activities such as backpacking and winter camping.

**Preferred Alternative**

Opportunities will continue for permit camping on the forest for activities such as deer hunting and sturgeon fishing.

- Winter camping at canoe campsites will be available by permit only from December-March. Permits are available on a limited basis; minimal facilities are provided and camping fees are not charged.
- Dispersed backpack camping will be allowed along a new linear hiking trail. There will be no designated facilities or amenities provided and there is no fee.
- Several primitive campsites will be designated to provide hike-in, backcountry camping. These sites will be sustainably developed and located near water. Primitive campsites have non-motorized access, and are widely dispersed and remote. Amenities include: a tent pad, fire ring, box latrine, and site marker.

**Management Actions:**

- Maintain opportunities for permit camping, deer hunting and sturgeon fishing.
- Maintain access points /roads in the forest for all users.
- Designate and develop several remote backpacking campsites near water.
- Allow winter-only backpack camping at river campsites, reservable by no-fee permit.
- Provide walk-in access to primitive campsite locations. Consider opportunities near Hackett Creek, Butternut Creek, Bull Creek, and the Pinery Grade.

**Alternatives Considered**

1. Formalize and/or designate special camping locations by identifying and tracking traditionally used camping locations.

Alternatives that were chosen that are administratively manageable and shouldn't disrupt traditional use.

**DAY-USE AREAS**

There is only one day-use area, Connors Lake Picnic Area, on the forest. This is a well developed facility with a 300-foot swimming beach, boat landing, paved parking, pet walking area, fishing, beach-front benches, drinking water, volleyball court, horseshoe pits, and vault toilets. The picnic area includes a reservable shelter with electricity.

**Preferred Alternative**

Three day-use areas will be developed on the forest. Day-use areas typically provide activities like picnicking, swimming or sight-seeing. Some locations feature scenic vistas or observation areas, hiking and nature trails, or water access. Connors Lake Picnic area, a popular day-use location will receive some new amenities. Slough Gundy, a scenic and frequently visited location on the forest, will be developed and improved for day use. Hervas Landing, an over-used river campsite, will be restored and re-designated as a day-use /picnic area. The Cedar Rapids river campsite will be restored to a natural open area, and camping will be relocated to more sustainable locations upstream and downstream. (Alternative campsites will be developed elsewhere along the river to replace campsites removed at Hervas and Cedar Rapids.) A third day-use area will be located near the new forest headquarters and will include picnic tables, restrooms, drinking water, and nearby access to information facilities and a shower facility.

**Management Actions:**

- Relocate camping away from Hervas Landing and maintain the area as a designated water-access-only, day-use area (see River Recreation).
- Relocate camping away from Cedar Rapids camp and maintain the location as an undesignated, undeveloped, open area.
- Increase law enforcement and forest staffing for safety and maintenance at river campsites.
- Pursue future development in stages, prioritizing needs to address user demand or conflict, and site restoration.
- Upgrade the existing day-use picnic area at Connors Lake with playground equipment and fishing piers.
- Develop Slough Gundy as a day-use area to enhance viewing opportunities. Improve access, develop trails, and provide ADA accessibility to Little Falls. Add a kiosk to interpret history of the site and examine ways to improve parking.
- Maintain the fire tower location as a landmark / historical interpretive stop. Consider the location as a site for supervised interpretive programs. Explore the possibility of a viewing tower.
- Examine opportunities for developing a formal shooting range on the property.
- Install or upgrade information facilities – see Education.

**Alternatives Considered**

1. Increase the number of day-use areas on the forest.

It was determined that popular scenic areas on the forest that already have day-uses associated with them could be enhanced to better accommodate this use. *\*Additional discussion on day -use areas can be found in the river recreation section at the beginning of this section.*

## BOAT LANDINGS

There are currently 14 watercraft landings on the forest. Some landings see heavy use and some need improvements. At some locations additions of fishing piers or ADA upgrades would enhance accessibility for various purposes. The table below shows current boat landings, proposed changes, and type of boat landing.

**Table 2.3: Current Boat Landings on the Flambeau River State Forest and Proposed Changes**

Boat Landings on the FRSF							
Landing	Location	Handicap Facilities	Drinking Water	Toilets	Parking Capacity	Landing Type	Proposed Changes
Nine Mile	Highway 70	X	X		7	Boat Access	
*Dix Dox (ramp)	N. of Hwy. 70 on Oxbo Dr	X	X	X	26	Boat Access	
Highway W	Hwy. W at north fork		X	X	10	Canoe Access	ADA Boat Access
Camp 41	East of the river	X	X	X	12	Canoe Access	
Fisherman's	Hwy. M south of Bear Creek Rd.		X	X	10	Canoe Access	
*Hervas (ramp)	End of River Rd., east of river	X	X	X	6	Boat Access	
Beaver Dam	Beaver Dam Rd. west of river			X	12	Canoe Access	
*Connors Lake (ramp)	Hwy. W, west of Hwy. M	X	X	X	15	Boat Access	
*Lake of the Pines (ramp)	Lake of the Pines Campground	X	X	X	10	Boat Access	
Pelican	Pelican Road				2	Canoe Access	
Bass	Bass Lake Road				10	Canoe Access	
Sobieski Flowage	Sobieski Flowage				5	Canoe Access	
Robinson	Upper Flambeau				15	Boat Access	Add Toilets
Holtz	Upper Flambeau				5	Boat Access	Add Toilets Develop parking
Upper Flambeau	Upper Flambeau				10		New Landing, Add Toilet

\* ADA Accessible

Boat Access: Unpaved ramp with trailer access

Canoe Access: Carry-in

### Preferred Alternative

A variety of boat and canoe landings provide access to water resources. Most landings will remain the same. Some will be improved where practical to meet users' needs, such as handicap accessibility, ramp, fishing pier, boat washing station, or signage.

Some landings will be redeveloped to protect shoreline or to improve the approach to water. An additional landing will be developed on the Upper Flambeau to improve public access. Several landings will be improved to provide ADA accessibility. Information facilities will be installed to provide maps and details about water related conservation issues or recreational use.

#### Management Actions:

- Make Connors Lake landing ADA accessible.
- Install /upgrade information facilities at landings – educational kiosks, rules and policy signs, and maps
- Signage at the landing to deter power-loading (describing problems caused by power loading).
- Install a washing and collection station for milfoil at Connors Lake (currently no milfoil on Lake of the Pines.)
- Improve Fisherman's landing
- Improve all put-ins /take outs
- Develop a boat landing on the Upper Flambeau, north of the River in as opportunity becomes available.
- Maintain Bass Lake landing as is.
- Improve Hwy. W landing with improved approach and back-in landing (similar to Dix Dox) and with ADA accessibility.
- Install or upgrade information facilities – see Education

#### Alternatives Considered

1. A range of options were examined for increasing public access to water resources in areas with limited access or areas with known access needs. Considerations included resource compatibility and environmental impact, established use and user conflict.

Developments proposed in the preferred alternative were based on sensitivity to resource and social needs.

2. Do not develop boat landings on the Upper Flambeau.

Currently there are only two access points and no camping opportunities for the 14 mile stretch of the Upper Flambeau. Additional access is needed to provide other river travel options.

## UPPER FLAMBEAU

The Upper Flambeau unit of the forest lies approximately 30 miles northeast of the main forest. It contains a 300' width of scenic shoreline on both sides of the river, stretching 14 miles downstream below the Turtle Dam. The area totals a little more than 1,100 acres. The Upper Flambeau provides a primary connecting route between public land to the east and west. There are two landings along this stretch of river and no designated campsites. This area is used primarily for river recreation.

The public and the Department are interested in maintaining limited development along the Upper Flambeau portion of the FRSF. It is a 14 mile paddle from Turtle Flambeau Flowage to camping facilities near Park Falls, WI. Groups and individuals paddle this section of river and there is no authorized camping. Additional access will be discussed

#### Preferred Alternative

Management of the Upper Flambeau river corridor will maintain its wild and remote character with minimal facility development. The river corridor will be maintained as a scenic resource management area with a recreational use setting consistent with the low level of level of development and remoteness found on the Upper Flambeau. An additional landing will be developed to improve public access. Compatible off-river camping will be developed at a future date as opportunity allows.

#### Management Actions:

- Apply a scenic resource management classification and a type-2 recreational use setting.
- Create one additional landing /river access for put-in and take-out.

- Maintain the wild and remote character of the river, and a minimal level of development.
- Develop and provide off-river group camping as opportunities allow. (Future boundary expansion may provide options for compatible recreational development. Designated camping in a larger block of property, off water, would have less impact on the scenic corridor. This would accommodate the needs of river paddlers making multi-day trips down the river. Access for maintenance and enforcement would be needed as part of this development. Ideally, camping would be located away from public landings or drive-in access.)
- Continue to work in cooperation with local townships regarding any future development on the Upper Flambeau River.

#### Alternatives Considered

1. Develop primitive river camping opportunities along the Upper Flambeau.

Public sentiment and the narrow 300' ownership on each side of the river corridor limit opportunities for developed camping.

## MOTORIZED RECREATION

There is increasing demand for motorized recreation trails in northern Wisconsin. The primary purpose of the current trail system is to provide a connection to other regional trail systems for snowmobile and ATV. The forest maintains 38 miles of trail for ATV riding from May 15-November 15, and snowmobiling throughout the winter. The trail provides access to another 74 miles of snowmobile and 65 miles of ATV riding on the Tuscobia State Trail. The Tuscobia Trail connects to more than 170 miles of other motorized riding opportunities including the USFS National Forest Deadhorse Run Trail.

The portion of the trail used for ATV travel extends nearly the length of the property from its northern link with the Tuscobia Trail, to Bear Creek Road, about 2 to 3 miles short of the southern property boundary of the forest. Snowmobile use continues on from this point, branching out and linking to trails in Price County to the east, and /or Rusk County to the south. Parking is available at four trailhead locations on the forest.

#### Preferred Alternative

##### ATV

- Connect the existing Flambeau River State Forest ATV trail to Price and Rusk County using existing snowmobile trails on the southern end of the property. Trail designation and implementation is dependant on a suitable trail location and Price and Rusk County providing a connector trail. Total new ATV trail miles are approximately 3 miles. Specific trail location will follow WDNR "Guidance for All Terrain Vehicle Use on Department Lands."
- Evaluate the feasibility to establish a new ATV trail to provide a link to public and private amenities or system to connect to the two existing trails near Conners Lake.
- The feasibility assessment will determine the environmental, social and economic benefits and limitations for the link connector trail. Determination of the feasibility will be completed by the draft plan.
- Construct a new parking lot north of Highway 70. across from the Oxbo Hill location.
- Allow partial canopy closure of ATV trails after initial construction to provide a more intimate riding experience. This will occur naturally over time. (Allowing too much closing of the trail by vegetation prevents the trail from drying out and increases user impacts and maintenance.)
- Construct a ramp at trail head(s) for loading/unloading ATVs.
- Provide opportunities for interpretive stops along motorized trails.
- Adjust timing of trail use (open/closed dates) as needed.
- Increase law enforcement presence on motorized trails.

- Develop an ATV Trail link NW to the existing Flambeau Trail from the parking area west of the river north of Highway 70.

### Snowmobile

A snowmobile trail reroute from Price Creek Road to trail #36, to remove snowmobile travel from the town road will be examined. Snowmobile/ATV trail facilities will be upgraded to accommodate users' needs and enhance sustainability. Additional parking is proposed north of Highway 70.

### Licensed Vehicles

An auto tour route is planned to interpret forest resources and management, and educate visitors about public benefits and opportunities that the forest offers.

#### Alternatives Considered

##### 1. Expand multi-use of motorized trails.

There is a shift away from the multi-use trail concept. Snowmobile/ATV travel on the Flambeau trail has been a compatible multiple use due to seasonal differences and attention to trail design. For example, the FRSF snowmobile/ATV trail is somewhat wider than many conventional ATV trails. It has a developed surface that is crowned to enable both seasonal ATV travel and winter maintenance with snowmobile grooming machinery.

- While some multiple uses are workable others are less compatible. Combining hiking or mountain biking with the motorized recreation raises concerns about safety and aesthetics. ATV obstacle courses for extreme sports riders, and moto-cross/motorcycle trail access were considered. This type of use and development is contrary to the traditional wild and remote character of the forest, and holds the potential for higher levels of disturbance and maintenance. Allowing trail access to vehicles during deer season, or extending trail spurs to day-use areas would encourage user conflicts and additional management issues.
- Potential exists to extend trails to existing motorized trail systems in neighboring counties to the south and east. Links to facilities and services available within the forest were also considered.
- Snowmobile trail routes or changes, motor boat access points, educational auto tours, LUVs, and ATV campgrounds were considered.
- LUVs, or light utility vehicles that are larger and wider than a conventional ATV, may need to be accommodated on the ATV trail in the future if this use becomes state law.

##### 2. Add ATV camping opportunities.

A new township ATV campground is being constructed near the north end of the Flambeau's ATV trail and other AV campgrounds are available within 20-30 miles of the Flambeau River State Forest.

Any new trail development or modification will be considered within the context of sustainability according to Department guidelines.

## NON-MOTORIZED TRAILS

Demand for hiking trails is high in all parts of Wisconsin, and enthusiasts are looking for more opportunities to hike and observe nature. Non-motorized trail options at FRSF are varied but somewhat limited. The 14 mile Flambeau Hills Trail is used for cross-country skiing in winter and off-road biking and hiking when the trail is not groomed for skiing. The forest offers a combined 3.5 miles of nature trails at the two campgrounds. A system of hunter-walking trails is maintained. There are no designated horse trails on the forest. Hiking, biking, horseback riding and snowshoeing is allowed throughout the forest on undesignated "woods roads". The majority of these existing trails are unmarked, and un-maintained. Potential exists to develop and provide additional non-motorized recreational opportunities throughout the forest.

## Preferred Alternative

### **River Recreation**

Canoeing, kayaking, fishing, camping and sightseeing – will be maintained and enhanced along on the famous Flambeau River canoe trail. A linear hiking /backpack trail will be developed to parallel the river and run the length of the forest to include dispersed camping opportunities.

### **Hunter-Walking Trails**

A system of hunter-walking trails will be increased and sustained by way of a rotating schedule of periodic maintenance. These roads and trails are identified as part of the road access plan. Campground nature trails will be rejuvenated. The Oxbo area will be redeveloped to provide summer and winter recreational opportunities. A new interpretive trail is planned in association with the Bass Lake Wilderness area. ADA accessible trail will be developed where opportunity allows.

### **Bicycling**

Develop a family bike trail connecting rustic family campgrounds (Connors Lake and Lake of the Pines), Connors Lake Day-use Area, and the new forest headquarters (including day-use picnic area, interpretive facility, and shower building). This would be a hard-surfaced trail developed in the woods or along a right-of-way, not as a paved highway shoulder.

## Management Actions:

- Establish a linear hiking trail, paralleling the river, and running the length of the forest. Develop trail spurs or connectors to primitive backcountry campsites near water, day-use areas, campgrounds, and scenic areas. Opportunities will be sought to work with external partners to connect to trail systems on other public lands such as the North Country Trail.
- Reopen /redevelop the Oxbo trail area for non-motorized multi-use and multi-season recreation, e.g. summer recreation hiking and horseback riding; winter sports area – ski-jouring trail, snow-sledding, snowshoeing trail.
- Improve /redevelop interpretive nature trails and signage at Lake of the Pines and Connors Lake campgrounds.
- Increase hunter /walking trails based on the forest's Access Plan
- Explore opportunities to develop hard-surfaced family bike trails to connect campgrounds, day-use areas and the forest headquarters, using road rights-of-way and existing trails.
- Further emphasize and establish the Flambeau River as a canoe trail with improved maps / interpretive-educational brochure to highlight river history, resources and management.
- Construct a ski-trail warming house and equipment shelter at Flambeau Hills ski trailhead.
- Develop an ADA accessible loop trail on the property. Look for opportunities to make sections of existing trails ADA accessible.
- Create an interpretive trail associated with Bass Lake Wilderness area
- Develop a family bike trail connecting existing campgrounds and the new forest headquarters.
- Explore opportunities for backpack campsites and interpretive trail or facilities at Sobieski Flowage.
- Install or upgrade information facilities – see Education

<b>Alternatives Considered</b>
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1. Not developing family bike trails or interpretive trails associated with campgrounds.

There is increased demand for family activities such as hiking and bicycle riding, and designating bicycling on town or county roads was considered too dangerous.

2. Develop horse camping and equestrian trails.

Developed horse trails and equestrian campground facilities are available on nearby public lands and horseback riding is currently allowed on forest roads and trails on the forest.

3. Leave the Oxbo trail systems closed.

Demand exists for additional winter activities and opportunities that the forest doesn't currently offer. This area provides additional trails, and opportunities to develop winter recreation that is easily accessible from Hwy 70.

## OTHER ACTIVITIES AND AMENITIES

### Hunting

The Flambeau River State Forest is a destination for many hunting enthusiasts. Deer, grouse, woodcock, and bear hunting are popular. Hunters desire good access to walking trails and habitat. It is important to provide multiple opportunities and to disperse hunters as much as possible to enhance users' experience and avoid user conflicts. Information and access are important topics to sports enthusiasts who want to know about rules and opportunities on the forest.

### Preferred Alternative

The state forest will continue to offer abundant opportunities for small and big game hunting and trapping. The diverse landscape of different forest types, lakes and wetlands found on the property will continue to provide important habitats for many game species. A system of hunter-walking trails will be increased and sustained by way of a rotating schedule of periodic maintenance. These roads and trails are identified as part of the road access plan. Logging roads and non-designated trails will continue to provide hunting opportunities (see Map 2.3). Non-motorized areas where one can seek a more remote, solitary walk-in hunting experience will remain at approximately current levels. Hunting and trapping regulations are outside the scope of the master planning process.

### Management Actions:

- Increase the current level of hunter-walking trails and access to hunting opportunities.
- Provide maps of hunter-walking trails – brochures, and FRSF web site.
- Consider “adopt-a-hunting trail” concept. Encourage user groups to help maintain trails.
- Explore additional funding sources, and consider private groups for partner projects.

### Alternatives Considered

1. Not increasing hunter walking trails.

There is a long history of hunting camps on the forest and consistent user demand for hunter walking trails.

2. Various means were considered for keeping hunters informed about rules and opportunities on the FRSF, including brochures, maps and the internet. Maintaining existing hunter access and walking trails was considered a priority although care must be taken not to over-promote popular or heavily used areas or locations containing sensitive resources.

### Fishing

The Flambeau River State Forest is a traditional destination for fishing. Fishing enthusiasts pursue both warm and cold water spe-

cies on the Flambeau River and surrounding lakes, or along numerous streams that feed the river. Developed and undeveloped landings provide access to water resources throughout the forest. Some are in need of restoration or enhancement to accommodate use and demand. Information and access are important topics to sports enthusiasts who want to know about rules and opportunities on the forest.

### **Preferred Alternative**

Access to water resources will be maintained at lakes and river corridors throughout the forest to provide opportunities for water recreation, boating, and fishing. Piers will be developed in some locations to enhance opportunities for shoreline fishing. Some boat access sites are open in the winter for ice fishing. Fishing regulations are outside the scope of the Master Plan.

### **Management Actions:**

- Provide information about rules and opportunities at information facilities, in publications or on-line, taking care not to over-promote specific locations.
- Encourage shoreline fishing.
- Develop fishing piers at appropriate locations such as Connor's Lake and Lake of the Pines Campgrounds.
- Continue to work with fisheries division on trout stream improvement projects.
- Maintain walking trails near Hackett and Price Creeks.
- Maintain reasonable access to traditional fishing areas on the north and south forks of the Flambeau River as allowed by the access plan.

### **Alternatives Considered**

Developing additional landings or piers was considered. Various options were discussed for keeping fishing enthusiasts informed about rules and opportunities on the FRSF, including brochures, maps and the internet. Care must be taken not to over-promote popular or heavily used areas or locations containing sensitive resources.

### **Management Actions:**

- Provide public access opportunities according to the forest's road access plan.
- Maintain connectivity with other public lands e.g. county forests.
- The forest will cooperate with county forests in providing future road access through state lands if needed for management purposes or public access not intended for motorized recreation.

### **Alternatives Considered**

There are approximately 61 miles of state forest roads open for public use. Road maintenance varies from lightly developed woods roads to highly developed county roads. The focus for of the Access Plan is primary corridors through the forest that provide access to forest resources for management purposes and for hunters and other recreationists.

### **Education and Interpretation**

The Flambeau is rich in cultural history and tradition worth sharing and preserving for future generations. Public appreciation of the forest grows when people learn the benefits of sustainable use and management of forest resources. Forest protection is a partnership when the public is educated about current issues, e.g. fire, invasive species, human impacts, and use of land and water resources. The forest's rich history and quality resource management offers abundant learning opportunities.

While varied recreational options are available at Flambeau River State Forest, visitor services and an opportunity to learn about the forest resource are limited by available staff, space and resources. Many have yet to discover the Flambeau River State Forest – its vast and wild resources and varied recreational opportunities. There is public demand to expand these areas to better serve clientele. The public has an interest in learning about the forest. The remote location, plus extensive forest and river resources provide many points of interest and options for educational programs, with the potential to involve local communities.

### **Preferred Alternative**

A range of educational activities will be initiated to enhance visitor experience and alert them to the benefits and opportunities provided by Flambeau River State Forest. Preserving the history and traditions of the forest through educational activity is a key objective. Educational outreach will enhance the forest's recreational niche by encouraging responsible behavior and use of forest resources, and public support. Information facilities will be installed or upgraded at key public contact points, landings and trailheads.

### **Management Actions:**

- Provide appropriate and professionally developed educational opportunities for forest visitors and recreation enthusiasts.
- Increase staffing and budget into the future to meet goals of the master plan for education, maintenance and enforcement.
- Develop space, as part of a new forest headquarters, for visitor services, self-guided interpretation and exhibits, and interactive learning opportunities.
- Interpret Flambeau's rich historical roots – Native American history, logging camps and river drives, CCC camps, historic hunting camps and partnerships.
- Provide staff for naturalist services and programming where appropriate – boat landings, campgrounds.
- Partner with other agencies on projects and initiatives.
- Utilize signage to convey positive educational messages throughout the forest.
- Update the forest's DNR web site to include river maps, forest information and attractions, camping opportunities. Link the web site to chambers of commerce /dept. of tourism
- Communicate with the public and support outreach to the local communities.
- Install /upgrade information facilities at landings, trail heads, campgrounds, river campsites, day-use areas as appropriate – e.g. educational kiosks, rules and policy signs, maps, designated use or capacity.
- Present a consistent message /theme to the public about forest use.
- Develop literature, maps and brochures.
- Support wildlife viewing opportunities.
- Facilitate special events.
- Promote FRSF as destination location for birding and wildlife viewing –FRSF is stop #71 on the Great Wisconsin Birding and Nature Trail, and is near stop #64 – Kimberly Clark Wildlife Area
- River Education – promote recreation rules and etiquette for camping and water recreation at landings, headquarters, campsites and campgrounds, and on the FRSF web site.
- Develop educational programs and literature to promote: 1) canoe safety and skills, 2) paddle and camp etiquette, 3) leave-no-trace camping ethics
- Materials might include: safety, skills & etiquette cards; brochures; web pages

<b>Alternatives Considered</b>
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To maintain its traditional management and recreational niche the forest considered a range of educational activities. Some options, for example hi-tech electronic interpretation or motorized tours may be incompatible with the “wild and remote” experience that the public expects at FRSF. Master plan alternatives that were chosen avoid over-pressuring forest resources, and over-promoting sensitive locations in the forest.

## ROAD MANAGEMENT

Roads, skid trails and landings are all part of the forest transportation system. Roads connect the forest land to existing public roads. They provide access for such activities as managing timber, improving fish and wildlife habitat, fighting fires, and recreation. Access across and within the Flambeau River State Forest is on a variety of road types, including State and County Highways, Town roads and State Forest Roads. Roads are maintained by the respective unit of Government. There are approximately 10 miles of State Highway, (State Highway 70), 20 miles of County Highway (M, W and EE) and 47 miles of town roads. There are approximately 60 miles of State Forest roads open for public vehicles and maintained at a level appropriate for a standard vehicle. State Forest Roads are considered State Highways by law. There are additional permanent and temporary State Forest roads closed to public vehicles and used for management purposes. These roads vary in development and maintenance standards including a lightly to primitive level of development. These roads also serve as access for hunters and hikers. The State Forest is responsible for the maintenance of all State Forest roads with more attention given to roads open for public vehicles.

## STATE FOREST ROAD CLASSIFICATION

There are several types of road classifications outlined in NR 44.07(3). The classifications reflect a range of development and maintenance standards. Road classifications include primitive, lightly-developed, moderately developed, and fully developed. Each

## COUNTY AND TOWN ROADS

County and town roads within the state forest boundary will continue to be managed by their respective jurisdictions and are outside the scope of the Flambeau River State Forest Master Plan.

Table 2.4 State Forest Road Classifications on the Flambeau River State Forest Open to Public vehicles.

Road Name	Approximate Mileage	Planned NR44 Designation
Prettie Road	1	Moderately Developed
County Line Road	0.5	Moderately Developed
Dix Doo Road Complex	3.5	Moderately Developed
Log Creek Road	0.5	Moderately Developed
Payne Farm Road	2	Moderately Developed
Payne Farm Road Spur Complex (3)	1.8	Moderately Developed
Tapaske Road Complex	2.8	Moderately Developed
West Lane North Access Road Spurs (4)	3	Moderately Developed
Camp 41 Road	0.5	Moderately Developed
West Lane South Access Road Spurs (5)	2.5	Moderately Developed
Hervas Road	3.5	Moderately Developed
Hervas Road Spur Complex (7)	3.5	Moderately Developed
Hervas Landing Road	0.5	Moderately Developed
Skinner Creek Road	3.5	Moderately Developed
Sobieski Road Complex	0.5	Moderately Developed
Power Line Road	0.5	Moderately Developed
Bear Creek Road	5.5	Moderately Developed
Conners Creek road	0.5	Moderately Developed
Bear Creek Camp Road	0.5	Moderately Developed
Hines Grade Road	2.5	Moderately Developed
Carlson Road	1	Moderately Developed
Price Creek Road	7	Moderately Developed
Price Creek Road Spur Complex (7)	1.5	Moderately Developed
Little Conners Creek Road	0.2	Moderately Developed
Nedli Road	4	Moderately Developed
Conners Lake Campground / Day Use Road	1	Moderately Developed
Highway W East Access Complex (4)	0.75	Moderately Developed
Tower Hill Road	2.5	Moderately Developed
Bass Lake Road	1.25	Moderately Developed
Lake of the Pines Campground Road	1	Moderately Developed
Pelican Lake Road	0.18	Moderately Developed
North Fork Road	0.2	Moderately Developed
<b>Total Mileage</b>	<b>60</b>	

A moderately developed road is defined as a permanent seasonal road or a permanent all-season road which typically is 2-lane, but may be one-lane, have a maximum sustained cleared width normally not exceeding 45 feet for 2-lane and 30 feet for one-lane, a well-graded roadbed and may have moderate cuts and fills and shallow ditching, has a surface of aggregate, asphalt or native material, and a maximum design speed of 25 mph.

Table 2.4A State Forest Road Classifications Closed to Public Vehicles on the Flambeau River State Forest

Road Type	Mileage (approximate)	Planned NR44 Designation
Lightly Developed Roads (Hunter Walker Access)	65- 85	Lightly to Primitive Developed
Primitive Forest Roads	300-500	Primitive Developed

## ROAD MANAGEMENT OBJECTIVES

- Provide a network of roads on the FRSF that meet land management and recreation objectives, while minimizing environmental impacts.
- Maintain state forest roads to the designated road standards and in a sustainable condition.
- Protect scenic values along road corridors in balance with management area objectives.
- Manage the spread of invasive plant species along road corridors.

## GENERAL ROAD MANAGEMENT PRESCRIPTIONS

- The Department managed roadways within the Flambeau River State Forest will be maintained in part according to the following requirements from the Best Management Practices for water quality:
  - Inspect active roads regularly (especially after heavy rainfall).
  - Clear debris from culverts, ditches, dips and other drainage structures to decrease clogging that can lead to washouts.
  - Keep traffic to a minimum during wet periods and spring breakup to reduce maintenance needs.
  - Shape road surfaces periodically to maintain proper surface drainage.
- Monitor and manage the spread of invasive plant species along roads using Wisconsin's Forestry Best Management Practices for Invasive Species. Control invasive species uses appropriate management techniques including but not limited to, herbicides, burning, cutting and mowing.
- Maintain visibility and clearance along roads that is adequate for the road classification and use.
- Restore roads used in timber harvest operations to non-erosive conditions after harvesting is completed
- Inspect roads through out the year for degradation and develop a maintenance schedule
- Annually review the roads open for public use and make adjustments as needed to enhance access for recreational users.
- Inspect and maintain designated lightly develop roads every three years to provide a system of roads for hunter walkers. Review, on an annual basis, the roads designated in this classification and make changes based on opportunities to expand or enhance the road network for recreational access.
- All road right-of-ways (66 feet) will continue to be controlled and maintained by their current operator (state, county, or town).

## ACCESS POLICY FOR PUBLIC VEHICLES

All state forest roads are open to public access with street licensed vehicles unless the road is bermed, gated, or signed closed. State forest roads are closed to ATVs unless designated for such use. The State Forest Superintendent may close a road to public use if it becomes degraded, unsafe, or for law enforcement reasons.

State forests regularly open and close forest roads primarily to conduct forest management. Roads open for management purposes are generally open to the public during the management period (one to two years) and a short time thereafter to allow access for firewood collection or other uses. Following this period they are closed with gates or berms.

The state forest will not maintain roads for the expressed benefit of private individuals or residents, but may, at the discretion of the State Forest Superintendent, consider land use agreements.

## AESTHETIC MANAGEMENT FOR ROADWAY CORRIDORS

Forest management techniques can be adjusted along roadways on the forest to ensure the long-term maintenance of scenic conditions is proportionate to the road's level of public use. The *DNR Silviculture and Forest Aesthetics Handbook* distinguishes three separate road types including Class A, Class B, and Class C roads.

**Class A Roads** are travel routes with heavy to medium use or roads where the use is for the specific purpose of enjoying scenery. These areas should be developed and maintained to the greatest scenic potential for public enjoyment. All state highways and county roads located within the state forest are classified as Class A roads, approximately 20 miles. All management activities will follow guidelines according to the *DNR Silviculture and Forest Aesthetics Handbook*.

**Class B Roads** are travel routes that serve a variety of uses where public traffic use is generally light to medium. Scenic attractiveness is of equal importance and is in balance with other land management objectives.

**Class C Roads** are primarily used for management access and public use does not occur, is infrequent, or is primarily for activities such as hunting, fishing, or berry picking. Aesthetics are considered in the management along these roadways; however, they are secondary to the prescribed land management activities for the area.

## BOUNDARY EXPANSION

### CURRENT BOUNDARY OF FLAMBEAU RIVER STATE FOREST

The Flambeau River State Forest was established in 1930 with 3,600 acres and a focus on protecting a small segment of the Flambeau River. It now protects over 75 linear miles of both the North and South Forks of the Flambeau River, state designated Exceptional Resource Water and Outstanding Resource Water respectively. The FRSF comprises approximately 91,000 acres in five counties (Iron, Ashland, Price, Sawyer, and Rusk). In addition to protecting the river, the state forest is one of several large public land ownerships in the region, including the Chequamegon-Nicolet National Forest, Price, Rusk and Sawyer County Forests, and other State properties including the Turtle Flambeau Flowage, Hay Creek-Hoffman Lake, and Kimberly Clark Wildlife Areas. The forest boundary provides for an outstanding natural amenity base locally and regionally, and provides connectivity to other public lands.

### PURPOSE OF BOUNDARY EXPANSION

The Wisconsin Department of Natural Resources administers an active land acquisition program for the purpose of protecting water resources, managing forests, providing wildlife and endangered resource habitat, and providing outdoor recreational and educational opportunities for all citizens. These lands are held in trust for the public to enjoy for fishing, hunting, hiking, trapping, cross-country skiing, biking, sightseeing, bird watching, boating, swimming, motorized recreation, outdoor education and other public benefits such as increased access.

Many factors were considered in the identification of potential boundary expansion areas. These include local and regional land use, public benefits, and opportunities to increase public access and protect important natural resources. Primary considerations are listed below:

#### Trends in Land Use and Ownership

- Large industrial ownerships near the forest are divesting lands, leading to changes in land tenure and reduced public access for recreation
- Forested lands are becoming more fragmented
- Demand for recreational and second home development is increasing
- Demographics and values of forest landowners are changing
- Some ecosystems/habitat types are rare or declining
- Demand for public access to water recreation opportunities is increasing
- Demand for regional recreation trails is increasing

#### Expansion Area Goals

- Large tracts of undeveloped land, particularly industrial forest ownerships
- Undeveloped water frontage
- Environmentally or ecologically sensitive areas
- Parcels that provide recreational opportunities or expanded opportunities, such as connectivity with regional trail systems
- Connectivity with other public lands
- Conservation Opportunity Areas (COAs) for wildlife Species of Greatest Conservation Need (SGCN)

**Boundary Expansion Objectives**

- Protect undeveloped shoreline along the Flambeau River and its flowages
- Maintain long-term sustainability of high quality and productive forests
- Improve and maintain access for recreational opportunities and enhanced management opportunities
- Connect to other large blocks of public lands for recreation and ecological benefits
- Protect high conservation value forests, wilderness lakes, and unique habitats
- Contribute to the local economies of Price, Sawyer and Rusk Counties through forest production and increased tourism

**BOUNDARY EXPANSION AREAS**

The Wisconsin Department of Natural Resources is proposing a boundary expansion to the Flambeau River State Forest as part of the master planning process. The boundary expansion areas under consideration (see Map 2.4 Proposed Boundary Expansion) represent six unique opportunities of approximately 48,000 acres adjacent to the existing property boundary. These areas were selected for their ability to provide additional ecological, economic, and social values to the property and region. An area summary table is shown below with each area discussed in detail.

Expansion Area	Acres
Area 1: Price Lakes Complex	9,504
Area 2: North Fork Watershed	18,655
Area 3: Western Unit	8,265
Area 4: Big Falls Flowage	9,875
Area 5: South Fork Buffer	859
Area 6: Upper North Fork Buffer	924
<b>Total Expansion Area Acres</b>	<b>48,082</b>

**Area 1: Price Lakes Complex****Acres: 9,504**

This area lies east of the Flambeau River State Forest boundary. Acquisition of this area would include the protection of several undeveloped or lightly developed lakes within a mosaic of quality northern forest. This area would also connect with the Kimberly Clark State Wildlife Area (8,700 acres), to create a large continuous block of public land.

*Expansion Area Opportunities:*

- Protect an important complex of undeveloped lakes, wetlands, and natural communities
- Create a large block of continuous forest land to maintain and enhance existing public uses
- Provide important habitat connectivity with Kimberly Clark State Wildlife Area to the east and Price County Forest to the south.
- Identified as a Conservation Area Opportunity for Species of Greatest Conservation Needs

**Area 2: North Fork Watershed****Acres: 18, 655**

This area lies northeast of the Flambeau River State Forest boundary. Acquisition of this area will protect more than 8 miles of the North Fork of the Flambeau River along its northern bank and protect several tributaries, including the headwaters of Nine-Mile Creek. This area provides connectivity with the Chequamegon-Nicolet National Forest to the northeast.

*Expansion Area Opportunities:*

- Protect an important portion of the North Fork of the Flambeau River corridor
- Create a large block of continuous forest land to maintain and enhance existing public uses
- Provide linkages between blocks of existing public lands to provide important habitat connectivity, connect regional recreation trails and protect tributaries
- Protect important habitat areas for unique species-this area is adjacent to a wilderness area of the existing forest boundary
- Opportunity for elk and marten introduction due to the remoteness and undeveloped landscape
- High conservation value forests have been identified in this area, with scattered pockets of old-growth hemlocks

**Alternatives Considered**

1. Extend southern boundary south of the Flambeau River to Hwy 70. This alternative was not selected due to highly developed areas along stretches of the river.
2. Extend the northern boundary to the Tuscobia Trail, where it is north of the County Road EE. This alternative was not selected because EE provides a clear northern boundary with good access and the Tuscobia Trail is well established at this location, limiting risk of conflict with adjacent landowners.

**Area 3: Western Boundary****Acres: 8,265**

This area lies west of the Flambeau River State Forest boundary. Acquisition of this piece would create a large block of continuous forest land, connecting state forest land with Sawyer County Forest land to the north and south. This expansion would allow for greater recreational access which has become more restrictive with changes in ownership.

*Expansion Area Opportunities:*

- Create a large block of continuous forest land, most of which is presently under a single ownership
- Connect state and Sawyer County forest land to create a large, continuous block of public ownership and connect important regional recreation trails
- Continue sustainable forestry practices on forested lands
- Existing County Highways (M and W) provide access to the area for management and recreation

**Alternatives Considered**

1. Include all industrial land west of the expansion area. Much of the area is in private industrial forest ownership and has been identified as a Conservation Opportunity Area (COA) for species of greatest conservation need. Several aquatic systems in this area are also COAs, including the Thornapple River. Recreational access, including regional motorized trail opportunities, was also discussed. This alternative was not chosen because of the immense scale and numerous private ownerships. However, this area remains an important area for resource protection and the Department should consider other conservation tools, such as conservation easements.

**Area 4: Big Falls Flowage****Acres: 9,875**

This area lies south of the Flambeau River State Forest boundary. This is an important component of the proposed boundary expansion, protecting 2.5 miles of the Flambeau River and Big Falls Flowage. Additionally, this acquisition area would create a large block of continuous forest land, most of which is presently under one ownership (industrial forest). It would also block state owned forest land with Silvernail State Wildlife Area and Sawyer and Rusk County Forests create a contiguous block of public ownership.

*Expansion Area Opportunities:*

- Protect an important portion of the Flambeau River corridor and Big Falls Flowage
- Connect state and county owned forest land to create a large, continuous block of public ownership and connect important regional recreation trails
- Create a large block of continuous forest land, most of which is presently under a single ownership and could be secured to maintain and enhance existing public uses
- This area includes a portion of the Thornapple River, which has been identified as a state Conservation Opportunity Area.

**Alternatives Considered**

1. Exclusion of Big Falls Flowage from the expansion area. This alternative was not chosen because of the recreational opportunities Big Fall Flowage provides and the opportunity to connect with Rusk County Forest in the southeast.
2. Smaller area expansion that includes only a portion of the industrial forest land. This alternative was not chosen because of the opportunity to create a larger contiguous block of forested land with Silvernail State Wildlife Area to the west and Sawyer County Forest to the North.

**Area 5: South Fork Buffer****Acres: 859**

The 300-foot buffer protects 6.7 miles on both sides of the South Fork Flambeau River and extends from the existing State Forest Boundary to the Kimberly Clark State Wildlife Area boundary. This acquisition would buffer and protect the scenic qualities of the undeveloped South Fork Flambeau River, as well as the unique Skinner Creek spring complex that flows into the river.

*Expansion Area Opportunities:*

- Buffer and protect river corridor to preserve the scenic qualities of the undeveloped river way
- Provide a buffer against incompatible land uses that would diminish visitor experience in the river corridor
- Protect critical portions of rivers or streams and ensuring the quality of the larger watershed

**Area 6: Upper North Fork River Buffer****Acres: 924**

The 300-foot buffer protects 6.5 miles on both sides of the North Fork Flambeau River. This area extends from the Department's existing ownership to the City of Park Falls and from Park Falls to Smith Lake, a Price County protection area. This acquisition would buffer and protect the scenic qualities of the undeveloped North Fork Flambeau River. In addition, new public access points could be established to provide a "river trail" experience.

*Expansion Area Opportunities:*

- Buffer and protect the river corridor to preserve the scenic qualities of the undeveloped river- way
- Provide a buffer against incompatible land uses that would diminish visitor experience along the river corridor
- Protect critical portions of rivers or streams and ensure the quality of the larger watershed

- Establish new and/or enhance existing accesses to the river and adjacent lands to promote public access and establish a "river trail"

## ACQUISITION POLICIES

All property purchases are on a willing seller basis. As required by state and federal laws, the Department pays just compensation for property, which is the estimated market value based on an appraisal. At times, it is in the interest of the Department and the landowner for the Department to acquire only part of the rights to a property, or an easement. The Department has a number of easement options available to address these situations.

Landowners within the state forest boundary will be contacted periodically by Department staff to explain the Department's land acquisition program and to see if they have an interest in selling their property. Acquisition priorities within the state forest vary from year to year and are based on a variety of factors, such as resource management or recreation needs and available funding.

Master plan amendments will be done when and as required by Wisconsin Administrative Code NR 44.04 when adding newly acquired lands to the Forest Plan.

## AIDES IN LIEU OF TAXES

Local governments and communities are often concerned about the perceived reduction of the tax base when private lands come under public ownership. According to State Statute 70.11(1), property acquired by Wisconsin Department of Natural Resources will come off the tax roll. However, in lieu of the loss of tax base, each taxing jurisdiction receives an aid payment dependent on the year the land was purchased (Wis. Stats. 70.113 & 70.114). Lands purchased by the Wisconsin Department of Natural Resources after January 1, 1992 (Wis. Stats. 70.114) pay aids-in-lieu-of-taxes that are similar to property taxes that would have been paid had the land remained in private ownership.

The difference between the Wisconsin Department of Natural Resources aid-in-lieu-of-tax program, as outlined in Wis. Stats. 70.114, and private lands is how the assessed value is determined. For lands purchased by the Wisconsin Department of Natural Resources the initial "estimated fair market value" is set at the purchase price of the property, which is based on an appraisal. If for any reason, such as a gift or partial donation, the purchase price is less than the property's original, estimated fair market value will be used instead. Once the estimated fair market value is determined, the local taxation district's level of assessment is applied to the determine the assessed value. In subsequent years, this value is adjusted to reflect the change in the assessed value of the land in the taxation district. All other aspects of the way Wisconsin Department of Natural Resources pays aid-in-lieu-of-tax are the same as those for a local taxpayer.

## EASEMENTS, ACCESS PERMITS, AND LAND USE AGREEMENTS

- Easements provide access across state property for utilities, town roads, or county highways. Easements are permanent and would continue to be upheld under the master plan.
- Access permits provide access across state property to private ownership within the forest boundary. Land use agreements provide for a variety of uses on state forest property, such as snowmobile trails and other recreational facilities open to the public.
- The Wisconsin Department of Natural Resources has a long history of cooperation in managing and maintaining public recreational and community facilities and access.

The Flambeau River State Forest supports land use agreements with public and private partners that provide public benefits. Land use agreements can be used to facilitate agreements with partners to provide services that meet the goals and objectives of the forest plan. Existing and future land use agreements will be evaluated on an individual basis and reviewed periodically. New Land Use agreements will follow Department standards for review and approval.

Existing easements, land use and access permits will be reviewed periodically for compliance. The Department may grant new agreements, permits or easements where they do not conflict with the master plan's goals and objectives. All such requests will be evaluated on an individual basis, and follow Department standards for review approval.

## **FUTURE BOUNDARY ADJUSTMENT PROCESS**

From time to time adjustments in the forest boundary are needed. In some cases parcels of land are removed from the boundary to allow alternative, necessary public uses by local governments. In other cases it may be desirable to add small parcels adjacent to the Forest so they can be purchased for resource protection or to meet expanding recreational needs. Property boundary changes of 40 acres or more require approval by the Natural Resources Board. Wisconsin Administrative Code Ch. NR 44 provides a plan amendment process that may be used to make adjustments in the Forest boundary.



